Indian Archaeology

1953-54 A REVIEW





A. GHOSH

INDIAN ARCHAEOLOGY 1953-54

—A REVIEW

Report of the Director General of Archaeology in India on the occasion of the meeting of Central Advisory Board of Archaeology, 1954

EDITED BY

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FOREWORD

I am happy to place in the hands of the readers the reprint of *Indian Archaeology 1953-54—A Review* which was originally published in the year 1954. Initially, the *Review* was published as the report of the Director General of Archaeology in India on the occasion of the tenth meeting of the Central Advisory Board of Archaeology. Shri A. Ghosh, in whose time the Survey made all-round progress and who had started this new series in the publications of the Survey, in the preface of the *Review* gave the background and the need for a publication of this kind after the *Archaeological Survey of India—Annual Report* had ceased publication; the last issue being for the year 1937-38. In course of time, *the Review* became an indispensable work of reference. During his tenure, Shri Ghosh was able to publish as many as twelve issues—the last being for the year 1964-65. It would perhaps not be out of place to quote from the Preface to this *Review.* He wrote : 'I started this *Review* in 1954 almost as an experimental measure...Thereafter the arrangement of the items appearing in the subsequent numbers has been improved to the best of my ability and the subject matter has become more comprehensive. At present hardly any publication on Indian archaeology can do without referring to some matter or the other appearing in the *Review.* This shows that the experiment has been a success.'

The has maintained its utility and position as envisaged by the late Shri Ghosh. This is evident from the persistent demand for all its issues. As the earlier issues had gone out of print, the *Review* for the year 1953-54 is being reprinted alongwith the other subsequent issues for the years I954-55 to I957-58 to meet this demand.

New Delhi
January 1993

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Dirctor General
Archaeological Survey of India

PREFACE

The present *Review* brings in a new series in the publications of the Department of Archaeology of the Government of India, and as such a word of introduction is necessary.

When Mr. (later on Sir John) Marshall assumed charge of the Archaeological Survey of India, he inaugurated the series of *Annual Reports* of the Survey. In the first *Report,* that for I902-03, he thus defined their object: 'Instead of silently accumulating during a long course of years the materials for some future volumes, and keeping these materials hidden, as it were, behind a hoarding until the finished structure can be disclosed, it is the intention to show year by year exactly what materials have been and are being collected...More than this, it is the intention to attempt to do for India something of what the volumes issued by the Egypt Exploration Fund during the last 20 years have done for the Land of the Pharaohs,—to attract wider and more abiding attention to India's grand treasure-house of historical relics.'

It is not generally known that the renowned volumes entitled *Archaeological Survey of India, Annual Report* were intended to represent Parts II of the *Report* ; Parts I of the series dealt with administrative matters but were much less sumptuously printed and less widely circulated. Both the Parts were regularly published till I915-I6, when it was decided that the issue of Part II should cease and that its place should be taken by detached Memoirs. Accordingly, Parts I of the Report were published regularly till the year I918-I9 simultaneously with the series *Memoirs of the Archaeological Survey of India.* This latter series continues to the present day, and seventyone *Memoirs* have been printed till now, two more being in the press.

In I920-2I this policy had to be revised in view of the fact that with the centralization of Archaeology under the Government of India Act, I9I9, the reports issued by the Local Governments came to an end and the matter contained therein had to be incorporated in the Director General's *Reports.* In this new form the *Reports* continued till I936-37. In 1938 Rao Bahadur K.N. Dikshit, the Director General, decided that as they included much matter in which the archaeological public were not directly interested, the future ones should be split up into two parts, the first, in a more convenient format, dealing with exploration, epigraphy and other researches, and the second with conservation and routine-matters. Unfortunately, due to the outbreak of the War, during which all archaeological publications were suspended, the scheme could not materialize.

When Dr. R. E M. (now Sir Mortimer) Wheeler took charge of the Director Generalship of the Survey in I944, he independently endorsed the view of his predecessor that much of the contents of the *Reports* were avoidable and should be eschewed and essential research-matter published in a more attractive form. He therefore decided to publish a periodical bulletin, to be called *Ancient India* and to contain individual articles relating to the archaeology of India and adjacent lands.

The publication of *Ancient India* continues, and it is a matter of no mean gratification that it has fulfilled its function as a research-journal and has won' for itself a place in the international archaeological literature. Nevertheless, it cannot take the place of the old *Annual Reports,* for it is not a proper forum for giving, even in outline, the manifold activities of the Department, not to speak of the progress of archaeological research all over the land.

The need of a report, however brief, surveying the antiquarian work in the country, with particular reference to that of the Department of Archaeology, therefore, remained : in fact, the need increased every day with the growing (and at times pardonably uninformed) interest in archaeology amongst the public. How this want could be met had been engaging the attention of the Department for some time past.

A body, called the Central Advisory Board' of Archaeology, was formed by the Government of India in I945 with the intention of associating scholars and learned institutions in India with the activities of the Department and to get their advice about its betterment. Nine meetings of the Board have taken place and the successive Directors General have placed their reports before the Board giving the salient features of the activities of the Department and of the advance of archaeology in general in the country. In the last meeting of the Board held in I953 it was suggested that reports on these lines should be printed and widely circulated in future, so that they could be accessible to the world at large. This useful suggestion of the Board has now been worked upon, and this publication, the first of a series, is the result thereof.

While inaugurating his series of *Annual Reports* Sir John Marshall prescribed their scope as follows : 'As the scope of this "Annual" is to be co-extensive with current archaeological operations, the contents will relate first and principally to Conservation, secondly to Exploration and Research, and lastly, to Epigraphy. Under each head a plain tale will be told of the year's work, without any straining after literary effect.' I am sure readers of his invaluable *Reports* have not agreed with him in the latter part of this statement and have regarded it as an under-estimate of their character. On the other hand, it exactly represents what we have in mind in regard to the present series.

The bulk of this *Review* is necessarily based upon material received from my colleagues in the Department, to whom my thanks are due. I am also grateful to the Archaeological Officers of the States, who helped me with information relating to their activities. Dr. H. D. Sankalia of the Deccan College Post-graduate and Research Institute, Poona, Dr. B. Subbarao of the Baroda University, Dr. Moresh-war G. Dikshit of the Saugor University, Shri G. R. Sharma of the Allahabad University and Shri Vijayakanta Mishra of the K. P. Jayaswal Research Institute, Patna, immensely obliged me by readily sending the accounts and photographs of the excavations carried out by them. I am also indebted to my colleagues at headquarters for their very valuable assistance in the preparation and printing of this report.

NEW DELHI A. GHOSH

The 3Ist August I954

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INDIAN ARCHAEOLOGY 1953-54

-A REVIEW

I. GENERAL

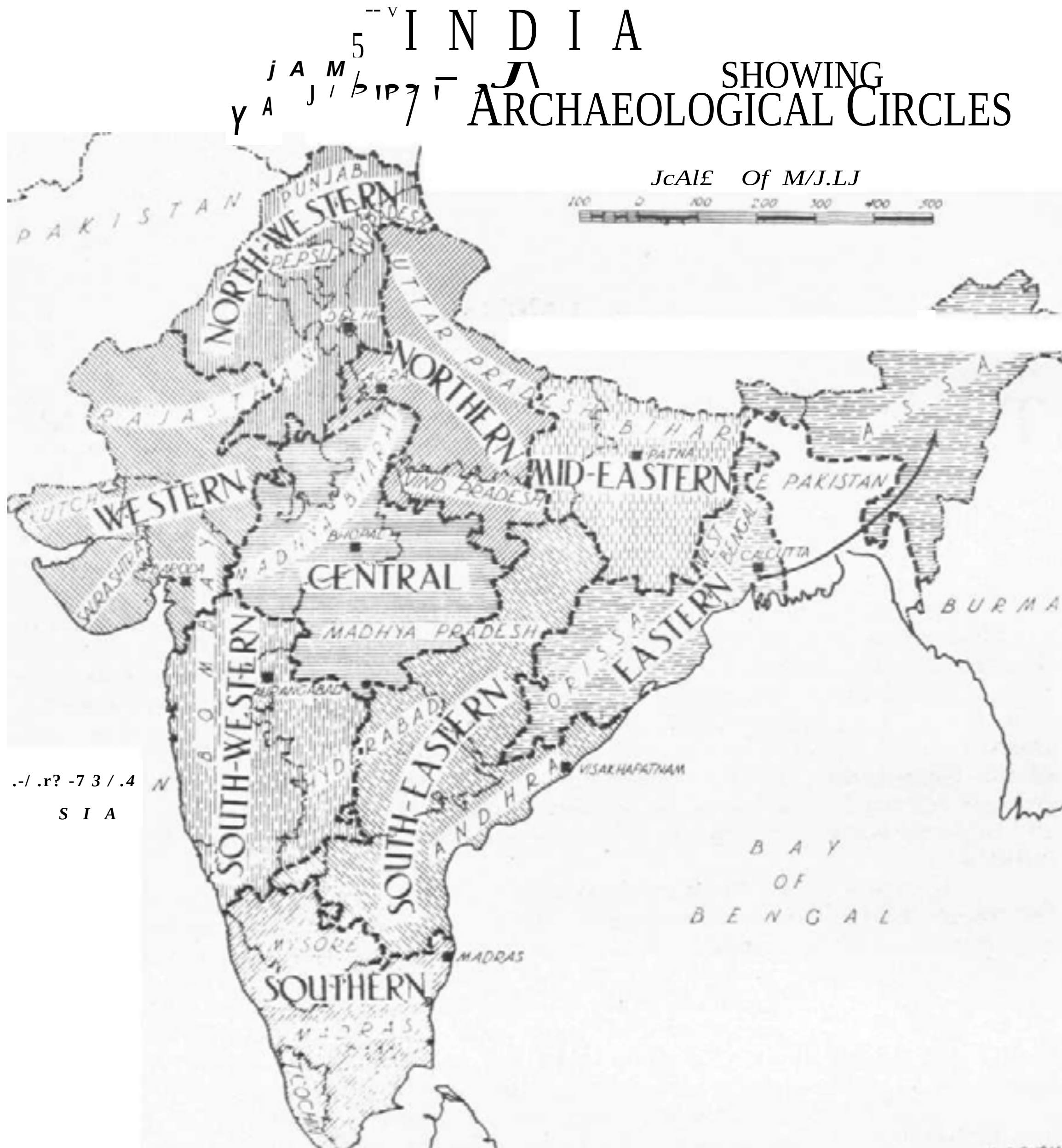
THE last meeting of the Central Advisory Board of Archaeology was held at New Delhi on the I4th August, I953. The problem that was looming large at that time before the Department was the integration of archaeology in Part B States. After the lapse of one full year I am glad to be able to report that effective control has been assumed on the monuments of national importance in these States and the two new Circles formed last year have been functioning smoothly.

* * * * *

A reference was made in the last year's report to the 'Ancient and Historical Monuments and Archaeological Sites and Remains (Declaration of National Importance) Act', passed by Parliament in I951, by which all the monuments and sites in Part A States previously protected under the Ancient Monuments Preservation Act of I904, together with a large number of those in Part B States, were declared to be of 'national importance', in order that they might, under the provisions of the Constitution, be the responsibility of the Union Government. In I953 the Act was amended so as to include fiftythree additional monuments and eighteen sites and to delete twenty monuments which were being maintained on the list without justification.

Members are no doubt aware that the Constitution imposes upon the States the responsibility of the maintenance of monuments other than those of national importance. This has rendered it necessary that the State Governments should have on their statute-books laws similar to the Ancient Monuments Preservation Act, without which the responsibility of the Governments towards their monuments can not be fulfilled. The Government of India have, therefore, recently addressed all State Governments impressing upon them the imperative necessity of promoting legislation to enable them to 'protect' monuments of local importance.

Equally urgent is the necessity for the State Governments to have their own archaeological organizations. Realizing this, the Board passed a resolution last year to the effect that each State should take steps to 'appoint a properly qualified archaeologist with suitable staff for taking proper care of the monuments and ancient sites left to its charge and also for further exploration of the antiquities within the boundaries of each State.' The response to this resolution has been far from


INDIA
SHOWING
ARCHAEOLOGICAL CIRCLES
PAKISTAN
PUNJAB
NORTH-WESTERN
PEPSU
DELHI
UTTAR PRADESH
NORTHERN
AGRA
RAJASTHAN
BIHAR
PATNA
MID-EASTERN
E. PAKISTAN
WESTERN
KUTCH
SAURASHTRA
BARODA
BHOPAL
VINDHYA PRADESH
CENTRAL
MADHYA PRADESH
CALCUTTA
WEST BENGAL
BURMA
ORISSA
EASTERN
AURANGABAD
SOUTH-WESTERN
HYDERABAD
SOUTH-EASTERN
VISAKHAPATNAM
ANDHRA
BAY OF BENGAL
MYSORE
MADRAS
SOUTHERN
COCHIN

encouraging, but we still hope that in not too remote a future the States will rise to their responsibilities and contribute their bit towards saving the ancient heritage of the country.

* • • ◆ •

The following report is divided into the usual sections, each indicating, in the main, the activities of the Department of Archaeology but also recording those of sister State Departments where they exist and, in the branch of exploration, those of the few institutes and universities which have zealously taken upon themselves the self-imposed task of field-research. I may outline here the main features of the report.

In the field of exploration and excavations, it is now the declared policy of the Department that, in addition to the major excavation done each year by the Excavations Branch, the Circles will undertake small excavations, consistently with their other duties, the maintenance of the proper standard and the availability of funds. This policy was given effect to, wherever possible, during the year under review, with the result that the activity of the Department in the direction of excavations was brisk.

No well-planned work could be done in the field of palaeolithic research in the absence of a prehistorian on the staff, but exploration at microlithic sites was not neglected." The excavations at Rupar and Rangpur had a significant bearing on the Harappa culture ; the former place was equally important for the Painted Grey Ware culture as well. Maski yielded important data on the megalithic culture of the Deccan. Historical archaeology had its due share: Rupar itself had large deposits belonging to the early and late historical periods : Rajgir, the important ancient capital, was excavated; Jagatgram produced important relics of two *asvamedhas*; and extensive Buddhist remains and small antiquities were found at Salihundam.

As in previous years, learned institutions contributed not a little to the progress of archaeological research in the country. It is, however, unfortunate that no new bodies are coming forward to undertake similar work.

While the progress in the Epigraphical Branch of the Department was admittedly not as rapid as what it could be in a country like India with a vast epigraphic material, the limited staff of the Epigraphical Branch made a large number of important discoveries and contributed to historical knowledge by their study of new inscriptions and re-study of old ones. Proposals for the reinforcement of the Branch, as of the other Branches of the Department, have been formulated and are receiving the attention of the authorities.

The preservation of monuments, the primary function of the Department, continued to receive full attention, a very large share being directed to the monuments the maintenance of which became for the first time the responsibility of the Union Government. Definite programmes of the preservation and upkeep of the more important of them, e.g. Ajanta, Ellora and Golkonda in Hyderabad, the Hoy-sala monuments and Tipu Sultan's buildings in Mysore, Mandu in Madhya Bharat, Chitorgarh in Rajasthan, Sanchi in Bhopal and Khajuraho in Vindhya Pradesh, were framed and are being executed.

Of the other monuments attended to, mention may be made only of the fol-lowing out of a vast list: the Taj, where work was continued mainly in implementation of the recommendations of the Taj Committee ; Agra Fort, where the repairs to the roof of Musamman Burj were an intricate work ; Makhdum Shah Daulat's tomb at Maner, the fine carvings on the ceiling of which had been fast decaying; Sibdol

temple in Sibsagar, the earthquake-shaken fabric of which required consolidation and extensive re-construction; Virabhadrasvami temple at Lepakshi, which had been in a badly-neglected condition ; the Brihadisvara temples at Tanjore and Gan-gaikondacholapuram, the clearance of the latter of which revealed many hidden features of its plan; Elephanta, which, due to its proximity to Bombay, not to speak of its intrinsic supreme importance, is to be kept in excellent trim; and the Vaishnava temple of the Gupta period in Mandor fort, Jodhpur, and the group of medieval temples at Badoli, Kotah, where extensive jungle had hidden all their features.

The Chemical Branch contributed towards the preservation of monuments, particularly the preservation of old painted surfaces. The paintings in a very large number of monuments were cleaned and fixed and hidden ones exposed to view. In many cases, the weather-beaten surfaces, overgrown with fungal and algal growth, were chemically cleaned. The Branch, by experiments, evolved suitable methods for the removal of soot without injuring the underlying paintings or delicate sculptures and initiated research in many branches of archaeological chemistry, including the study of ancient ceramics and soil-analysis.

The scope of the Museums Branch was increased by the inclusion of new museums under its control, viz. the Kondapur Museum in Hyderabad, the Sanchi Museum and the Jardine Museum at Khajuraho, which devolved upon the Department as a result of its having taken over the monuments to which they were attached. Expeditious steps were taken to staff them properly, to prepare proper accession and other registers (none of them had any) and to run them as useful site-museums. The newly-started Hampi Museum, designed to house the sculptures lying all over the ruins of Vijayanagara, started assuming shape.

To the charge of the Gardens Section of the Department have just now been added the gardens attached to the monuments at Agra, and more will be added in due course.

* * * * *

The following table shows the budgetary allotment (in rupees) for the Department in the last financial year and the current year.

Heads of expenditure	I953-54	I954-55
I. Directorate	13,I9,600	15,35,800
2. Preservation of monuments including establishment charges	15,88,900	23,84,700
3. Explorations		
(a). Establishment charges	1,63,200	1,80,200
(b). Exploration and excavation charges	1,27,300	2,51,800
4. Museums	2,54,500	2,82,700
5. Construction of and repairs to modern buildings	57,500	1,36,800
6. Charges in England	18,000	7,000
7. Lump-sum provision for expenditure in Part B States		l,00,000
(a). Provision for the new circles	6,99,000	
(b). Re-imbursement of expenditure to Part B States	2,00,000	
Total	44,28,000	48,79,000

GENERAL

It will be seen from the above that there is a slight increase in the current year's budget. The increase in the figure under 'Preservation of Monuments' is largely due to meet the requirements of the monuments that have recently been taken over, while that under 'Exploration' will be, to a great extent, utilized in executing the excavation-project at Nagarjunakonda, intended to save as much as possible of the relics from the site, which will in all probability be drowned as a result of the Nandikonda project.

* * * * *

Lately the Department has approached the Ministry of Education for the sanction of some essential posts for the better working of the Department. In this scheme provision has been made for a skeleton staff in each Circle for assisting the Superintende its in exploration. In order that a greater amount of repairs to monuments may be undertaken directly by the Circles and less work entrusted to contractors so that a proper standard in the execution of repairs is maintained, the posts of one additional conservation assistant and one sub-overseer have been included in the scheme. A reinforcement of the Epigraphical Branch has been provided for by the addition of two officers and four epigraphical assistants. Two posts of curators, one each for the Hampi and Khajuraho Museums, have also been proposed. Lastly, a few additional posts for the headquarters office have been asked for, as the work at headquarters has enormously increased, calling for a re-orientation of the office.

2. EXCAVATIONS

BIRBHANPUR, District Burdwan.—Birbhanpur, a microlithic site, was excavated by the Eastern Circle of the Department. The implements found here overlay a 5-ft. thick deposit of detrital laterite, which appeared to have been exposed to view at the end of the last pluviation of, the Pleistocene Period. The implements, therefore, might belong to the beginning of the Holocene and be ten thousand years old. Their high antiquity was confirmed by the weathered red colour of the sandy loam overlying them. Knife-blades, crescents, points, arrow-heads, awls, scrapers and burins were among the tools represented here (pl. I A).

RUPAR, District Ambala.—The problem of the wide gulf between the end of the Harappa culture in the mid-second millennium B. C. and the beginning of the historical period about the epoch of Buddha continued to engage the attention of the Excavations Branch of the Department. Members will remember that I made a reference last year to the excavation at Rupar, 60 miles north of Ambala (Panjab), with an almost continuous sequence of occupations from the Harappa to the medieval times, thus linking the protohistoric with historical archaeology. Work was resumed here last winter, particularly with a view to ascertaining whether the Harappans and the succeeding Painted Grey Ware people could be regarded as having come into contact with each other, and it was amply demonstrated that there was no such contact, at least at this place.

The Harappans, the first settlers at Rupar, probably remained in occupation of the site for about half a millennium. Overlying a thin fluviatile deposit of sand and pebbles was found almost the whole of the essential equipment of their culture, made familiar to us by the parent-sites of Harappa and Mohenjo-daro, including the characteristic pottery (pls. III A and IV A), beads, bronze celts, chert blades (pl. V A), faience ornaments, terracotta cakes and an inscribed steatite seal (pl. V B), bespeaking the absolute homogenity of the culture from Baluchistan in the west to the banks of the Sutlej in the east.

What brought about the end of the Harappans at Rupar is not clear. However, after a fairly long desertion, the site was re-occupied in *circa* I000 B. C. by a people of different stock and tradition. These people, using the characteristic Painted Grey Ware (pls. III B and IV B), the same as is found at many sites in north Rajasthan, Panjab and west U.P., inhabited Rupar for about three hundred years. Not much is as yet known about the authors of this culture, but it is certain that their advent was a landmark in the protohistoric archaeology of India. At Rupar, the Painted Grey Ware phase of occupation was devoid of any structural remains, and antiquities, apart from pottery, were meagre.

The third Period, commencing from the middle of the first millennium B. C, was characterized by the use of the Northern Black Polished Ware. Datable material from this Period, including coins (pl. V C), inscribed seals and typical terracottas, established the chronology of the Period on a firmer ground than was possible for the two preceding ones. A unique find was a small ivory seal inscribed with the word *Bhadapalakasa* in Mauryan Brahmi characters.

A perplexing discovery was a I2-ft. wide brick wall of this Period, preserved to a height of 2½ ft. and consisting of more than twelve courses (pl. II A). It was exposed to a length of about 250 ft., after which it was found to take curved turns at both ends. Apparently, it was an enclosure for some important edifice. Ring-wells were a feature of this Period (pl. II B).

The succeeding Period, dating from about the second century B.C. to the sixth century A. D., could be divided into Sub-periods on the basis of coins (pl. V C), seals, terracottas, etc. The coins ranged from the Indo-Greek (Antialkidas, Soter Megas and a mould prepared from a coin of Apollodotus II) to a gold issue of Chandragupta I. Taxila, Audumbara and Mathura types occurred in fair numbers, and there was a large hoard of over six hundred copper coins, mostly Kushan.

The medieval occupation, mainly on the part of the mound where the present town lies, was evidenced by glazed and painted polychrome pottery and Muslim coins found on the surface.

Excepting the Painted Grey Ware levels, structures were encountered in all Periods (cf. cover-wrapper). Almost from the first occupation river-pebbles, roughly-hewn *kankar* and mud and baked bricks had been used as the building material. The site was extremely rich in small antiquites of everyday use, such as beads, terracottas, and bone, ivory and metal objects.

RANGPUR, District Jhalawar, Saurashtra.—The Western Circle of the Department investigated into another aspect of the Harappa culture, viz. its southern extension. At Rangpur, 20 miles to the south-east of Limbdi Tahsil, Shri Madho Sarup Vats had conducted trial-excavations in I934-35 and believed it to be a southern outpost of that culture. Dr. G. S. Ghurye also dug there in 1936, and in I947 Dr. Moreshwar G. Dikshit did some further excavation. The last excavator felt that Rangpur had no Harappan affinities and that its culture, although distinct, was essentially post-Harappan and took shape after the advent of the Aryans.

A thorough and systematic examination was, therefore, undertaken last winter with a view to establishing or rejecting once for all the suspected Harappan affinity of the site. The excavation was definitely fruitful in that it demonstrated convincingly that Rangpur must have had Harappan contacts.

The cutting at Rangpur (pl. VI A) revealed a sequence of three cultures, microlithic, chalcolithic and late chalcolithic. Some crude microliths of jasper and agate, unassociated with any pottery, lay at the lowest levels of gravel, pebbles and shell, apparently representing a river-bed. The next culture was characterized by a thick red ware, with paintings executed in black or chocolate over a red or buff surface ; loops, dots, criss-cross lines, horizontal or oblique bands and circles constituted the main geometric designs, naturalistic designs being extremely rare. Perforated jar, dish-on-stand and shallow dish or basin were some of the distinctive shapes (pl. VII). These, together with copper or bronze axes, bangles, faience and steatite beads and triangular terracotta cakes, left no doubt of their association with the Harappan tradition. Among the microliths from these levels was a chert blade, again reminiscent of similar tools in the true Harappa culture.

The latest cultural level, also without iron, yielded several microliths and sherds of a black-and-red ware, which was similar to the pottery found at Ahar near Udaipur in Rajasthan and other sites in western India and which had a technical similarity with the 'megalithic' pottery of southern India.

MAHESWAR, District Nimar, Madhya Bharat.[1]—Apart from establishing a centre of the southern dispersal of the Harappa culture, the work at Rangpur has helped to complete the sequence of cultures in central and western India in another way. In my last year's report I made a reference to the excavation of Maheswar and Navda Toli by the Deccan College Post-graduate and Research Institute, Poona, in collaboration with the University of Baroda. Below the remains of three historical periods, the lowest of them yielding black-and-red ware in association with the Northern Black Polished Ware, the excavators found here vestiges of a proto-microlithic and proto-neolithic culture, followed by a culture the equipment of which consisted of chalcedony blades and finely incised and painted pottery. The latter included a small proportion of cream- or white-slipped pottery with designs, painted in black, of dancing human figures and goats and ibexes or a kind of deer (pl. VIII).

LANGHNAJ, District Ahmedabad.[2]—The University of Baroda re-examined this year the important prehistoric site of Langhnaj. In I942 and the following years Dr. H. D. Sankalia of the Deccan College Post-graduate and Research Institute, Poona, had conducted a series of excavations here. These excavations revealed a wide range of microliths, including burins, lunates, trapezes, triangles, and side-, end-and discoid scrapers. In association with this industry were found seven human skeletons in a semi-fossilized condition, their highly-flexed position indicating them as burials. The material of Langhnaj suggested that there were two distinct levels, but no such distinction could be established on the basis of the ordinarily-observed stratification.

By applying very dilute hydrochloric acid and thereby detecting the presence of calcium it was found out this year that an old surface lay between 2 ft. I0 in. to 4 ft. 2 in. from the present surface. What is more, a new skeleton was noticed below the old land-profile.

MASKI, District Raichur.—Maski, the famous site of an Asokan rock-edict in Hyderabad, has been attracting the attention of archaeologists for a considerable time, for the finds from the previous digs indicated the importance of the site for the early archaeology of the Deccan. But it was only a few months back that the site was subjected to a systematic excavation by the South-western Circle of the Department with the co-operation of the Hyderabad Department of Archaeology, with a view to "checking up and further elaborating the culture-sequence obtained in the excavation at Brahmagiri in I947. The cultural equipment of the earliest settlers of the first half of the first millennium B.C. was chalcolithic in nature, as evidenced by the occurrence of copper objects along with microliths (pl. I B). The pottery of the period had a thick gritty core and, at times, a pinkish buff slip. The second occupation represented a full-fledged Iron Age megalithic culture *(circa* third to first centuries B.C), characterized by extended or fractional burials, with grave-furniture consisting of 'black-and-red' pottery, typical of the 'megalithic' period of south India (pi. IX), thus contrasting with the fractional burials in cists or pit-circles at Brahmagiri. The last period of occupation was ascribable to the Andhra age (first-second centuries A.D.), as testified by the occurrence of Satavahana coins and the well-known russet-coloured pottery.

Other types of burials obtaining at Maski in the megalithic age are identified on the surface by menhirs in rows and stone circles with low cairns, one each of

[1] Information from Dr. H.D. Sankalia, who also kindly supplied the photographs.

[2] Information from Dr. B. Subbarao.

which was opened up this year. The former did not yield any funerary deposit, but the latter was identical in character with its counterparts at Brahmagiri.

RAJGIR, District Patna.—Rajgir, one of the most ancient capital-sites of India, was excavated by the Mid-eastern Circle. The site, of Jivakamravana, where Jivaka, the court-physician of Bimbisara, is believed to have erected a monastery for Buddha was one of the sites chosen for excavation. Two building phases were noted : to the earlier phase belonged a large elliptical hall, while the later one was represented by another long elliptical hall in the centre with subsidiary rooms surrounded by a compound-wall (pl. VI B). The pottery found at the site was uniformly coarse red, probably indicating an early date. Another site subjected to excavation was a mound along the eastern wall of the inner citadel. A high platform of rubble with revetments projecting against the rampart of the citadel, with three distinct stages of construction, was discovered here. In the lowest levels was found a medium to coarse red ware mixed with a few fine black sherds. The next phase was rich in the Northern Black Polished Ware and painted pottery. Red ware was the common industry in the last phase.

KAUSAMBI, District Allahabad.[1]—The University of Allahabad continued its work at Kausambi, an important city of the first centuries before and after Christ. This year the excavation was concentrated on the site of the Ghoshitarama monastery, identified as such in I95I ; besides, a section was cut across the adjacent defensive wall, and a new site near the modern Dharmasala was also tapped.

The monastic establishment (pl. X) proved to have been much larger than had been expected, being divided into self-contained units. The portion presently excavated contained the foundations of a large number of small *stupas* and pavements with numerous roughly-circular post-holes. It appears that ordinary monks were memorialized by the erection of small pillars, their relics being buried in earthen pots in the floors adjoining the small *stupas.* A number of sculptures, dating from the first few centuries before and after Christ and terracottas were recovered (pi. XI). An inscription of the famous nun Buddhamitra, of the reign of Kanishka, was among the epigraphical proceeds of the excavation.

The trench across the rampart indicated that after its initial construction in *circa* sixth century B.C. it had been thrice extensively re-built. The prominent mound near the modern Jaina establishment showed that occupation started here with the Northern Black Polished Ware (or slightly earlier) and ended in about the second century B.C. An almost life-size seated image of the Jaina Tirthankara Padmaprabhu, of the fourth-fifth century A.D., was found in a field nearby.

KUMRAHAR, District Patna.[2]—In the last year's report a reference was made to the excavations by the K. P. Jayaswal Research Institute, Patna, at the site of Kumrahar, ancient Pataliputra, where Dr. D. B. Spooner, in I9I2 and the following years, had excavated a large pillared hall. The Institute continued its work during this year. According to the excavator, although there was a pre-structural phase of occupation in the excavated area, the real structures started from the beginning of the Sunga period, *i.e. circa* I50 B.C. The different structural levels, as excavated, fell into four periods ; (i) *circa* I50 B.C.-A.D. I00 ; (ii) *circa* A.D. I00-300 ; (iii) *circa* A.D. 300-450; and (iv) *circa* A.D. 450-600. Apparently Kumrahar had

[1] Information from Shri G. R. Sharma, who also kindly supplied the photographs.

[2] Information from Shri Vijayakanta Mishra.

housed successive monasteries during its long occupation. At the monastery-cum-sanatorium known as Arogya-vihara the structures belonged to the first two periods. The second monastery included a long hall, 70 x 30 ft., and at its east and west there were series of rooms.

The Gupta structures had an interesting lay-out. There were three corridors running north to south and west to east with three flights of steps at irregular intervals. A sealing found near the Arogya-vihara had the legend *saghasa* and a plan of the monastery, possibly the plan approved by the *Bhikshusangha* residing there.

Apart from plain red ware, the pottery obtained from the site included coarse grey ware bowls and several sherds of the Northern Black Polished Ware, two of which were rivetted with copper wires, as noticed previously at Bairat in Rajasthan and Rupar in Panjab. Sunga and Gupta terracottas, stone sculptures, seals and sealings and coins constituted the main body of other finds.

VADNAGAR, District Mehsana, Bombay.[1]—The occurrence at Vadnagar of a red polished ware, which is found widely distributed in western and central India, led the University of Baroda to excavate this year at the site (pl. XII A). Nagara, Anartapura, Anandapura and Vriddhanagara are some of the names by which this town was known in the past. The excavation revealed a continuous sequence of three cultural periods. The earliest period, *circa* A.D. I00-200, was characterized by the predominance of a very crude pottery, also noticed at Baroda, Timberva and Amreli. The next period, dating from A.D. 200-600, marked a flourishing stage in the life of the city. Red polished ware was found in large quantities in this period, associated with a painted pottery with black designs on a bright red slip (pl. XII B). This pottery has been obtained from Kathiawar as well. The Roman affinity of this ware was confirmed by the associated find of an imitation intaglio in clay depicting a woman with flower in the hand. A clay seal in these levels was inscribed with characters of the second-third centuries A.D. The topmost levels, dated to *circa* A.D. 600-I000, yielded a distinctive coarse red-slipped ware painted with black designs on a white background. This ware has been also found at Baroda and Timberva.

JAGATGRAM, District Dehra Dun.—The preliminary exploration of the *asva-medha* sites at Jagatgram (30 miles to the north west of Dehra Dun, Uttar Pradesh, and within a couple of miles from the rock-edict of Asoka at Kalsi), where a king called Silavarman, of the third century A.D., performed for the fourth time an *asvamedha* sacrifice, was noticed in the last year's report. Subsequent excavation here by the Exploration Branch of the Department exposed remains of three sites where the king performed *asvamedhas*. In addition to well-designed bricks in the orientation of the *syena*, hawk or eagle, with spread wings (pls. XIII and XIV), bricks from the first site bore. Sanskrit inscriptions in the Brahmi script of the third century A.D., acquainting us with the information that the king left at the place the *chiti* or the architectural remains of his fourth horse-sacrifice.

The second site brought out a number of inscribed bricks containing verses in correct *anushtubh* metre in the same language and script. The verses reveal the personality of the king as *varshaganya*, *yugesvara* or *yugesa* and the lord of Yuga-saila. *Varshaganya* proclaims him as of Vrishagana-gotra, which is the sixtyninth *gotra* referred to by the grammarian Panini.

[1] Information from Dr. B. Subbarao, who kindly also supplied the photographs.

The word *yugesa* means 'the lord of a *lustrum'* and implies purification by sacrifice. The *Brihat-samhita* refers to twelve such *yugesas* beginning with Vishnu and ending with Bhaga. It is, therefore, interesting to note . that by virtue of his performing the *asvamedhas* the king ranked himself with Vishnu and other *yugesas* as a fitting *yugesa* of this *yuga.* Also, his performing the sacrifices at least four times brings out the comparison with the Greek or Roman *lustrum,* which, as we know, was performed periodically (once in five years) for the purification of a nation or people. The term *yugasaila,* of which Silavarman is described as the king, was probably the name of his capital.

The third site, which remains to be opened, showed the relics of another horse-sacrifice, performed by the same king, in the shape of bricks, one of which was again inscribed and bore his name.

The sites face the Himalayas and the river Yamuna in its first descent from the mountain. This circumstance perhaps inspired the name of the king's capital as Yugasaila.

The inscriptions on the bricks read as follows (pl. XV):

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'This brick is from (belongs to) the *asvamedha* of (performed by) Silavarman, king of Yugasaila and a *yugesvara* or lord of *lustrum.'*

'This is the altar of the fourth horse-sacrifice performed by king Silavarman, who was of Vrishagana-gotra and was sixth in descent from Pona or of Pona *(vamsa* ?).'

The word *Pona-shashtha* may mean 'sixth in descent from Pona', Pona being the first member of the *vamsa* ; alternatively, it may mean the sixth Pona of the dynasty, five other earlier kings having borne the same name. Who this Pona was, if it is a proper name, or what this Pona dynasty was, if it refers to a dynasty, are problems requiring attention.

The palaeography of the inscriptions clearly points to a transition-stage in the career of the Brahmi script, when both earlier and later forms of *ma* and associative *ya* occurred side by side. This would place Silavarman as a post-Kushan and pre-Gupta king, i.e., between A.D. 250 and 300, and as one who gave, presumably in association with other dynasties, the death-blow to the Kushan power in north India.

SALIHUNDAM, District Srikakulam, Andhra.—Adjoining the village of Salihun-dam on the Vamsadhara river, 5 miles from the sea-port of Calingapatnam, is a hill-site containing interesting Buddhist remains. Earlier excavations here had ex-posed a large *stupa,* a circular *chatty a* and two apsidal temples, one enshrining a votive *stupa* and the other an image of Buddha, besides other smaller structures and crystal reliquaries. On the evidence supplied by an inscription, engraved round the neck of a water-jar discovered in the Buddha-chaitya, the site was identified as an early Buddhist establishment known as 'Kattaharama' or ' Kattahara arama ', assignable to the second century A.D.

Excavation, resumed here early in I954 by the South-eastern Circle of the Department, revealed remains of buildings belonging to three distinct phases of structural activity (pl. XVI A), besides inscribed stones, enormous quantities of pottery, including the rouletted were, some with inscriptions, a terracotta relic-casket with gold flowers and a piece of bone in it (pl. XVII B), inscribed conches

(pl. XVII A), coins and seals, etc. The structures comprised four *viharas* or living apartments of monks, one of them styled 'Mahavihara', *chaityagrihas* or temples, a kitchen, store-rooms, dining and prayer-halls, stone-paved foot-paths with moonstone pedestals and votive *stupas.*

From the fragmentary information supplied by the inscriptions on stones, potsherds and conches, it is gathered that the original name of the village Salihun-dam was Salipetaka ('emporium of rice?'), and the hill on which the Mahavihara was situated was known as Maha-uga-pavvata. The inscriptions engraved on potsherds and on stones fixed in the pavement ranged in date from the second to about the sixth or seventh centuries A.D.

The bulk of additions to this complex appears to have been effected between the first and third centuries A.D., i.e. during the age of the Satavahanas and their immediate successors, when Buddhism was the most favoured religion in these tracts.

PALLAVAMEDU, District Kanchipuram.—Pallavamedu, a mound on the outskirts of Kanchipuram, is traditionally believed to contain relics of the Pallavas. Accordingly a trial-dig was made here by the Southern Circle of the Department. The excavation revealed four successive structural periods, the lowest of which contained some fragmentary ring-wells, coeval with what purported to be an urn-internment. The upper three phases could be distinguished from one another only on the basis of the superimposition of structures, there being no difference in pottery. Bangles made of shell Were found in profusion in different stages of manufacture (pl. XVIII), proving the site to have been a factory for their production. Though a Pallava date for the site was not ruled out, no typical Pallava antiquities were recovered.

SIRPUR, District Raipur.[1]—Sirpur, the capital of the Pandava dynasty of the seventh century, contains the ruins of several medieval temples. One of these ruined sites was excavated by the University of Saugor (pl. XIX A). The excavator exposed a Saiva temple-complex of the *panchayatana* type, conforming mainly to the known architectural features. Fragments of architectural pieces and sculptures constituted the main bulk of finds (pl. XIX B-D).

BHINMAL, Jodhpur.[2]—Bhinmal, the ancient Srimala, Ratnamala or Pushpa-mala, the capital of the Gurjaras in early medieval times, was excavated by the Department of Archaeology and Museums, Rajasthan State. A few medieval structures, made of bricks measuring 17½ X II X 2½ in., were brought to light, the associated ware being dark grey and red-polished.

MUMMA KHAN, Srinagar.[3]—At Mumma Khan, near the Central Jail in Srinagar (Kashmir), about fifty coins had been accidently found by coolies working there. As this part of the town was believed to have formed part of Pravarapura founded by Pravarasena in the sixth century, the Kashmir State Department of Archaeology dug here a few trial-trenches. The excavation brought to light structures of rubble and mud pertaining to three different phases. About twentyfive more coins were recovered. Although the natural soil was'touched at one or two places, no remains which could be assigned to an earlier date were found. The coins were all of the Afghan period, the majority being of Shah Shujah, who gained the throne of Kabul in the first decade of the nineteenth century, when Kashmir formed part of the Afghan empire.

[1] Information from Dr. Moreshwar G. Dikshit, who also kindly supplied the photographs.
[2] Information from the Chief Superintendent of Archaeology and Museums, Rajasthan State.
[3] Information from the Superintendent of Archaeology and Museum, Kashmir State.

3. EPIGRAPHY

INSCRIPTION OF ASOKA.—The outstanding epigraphical discovery of the year was an inscription of Asoka on a rock at Rajula-Mandagiri near Pattikonda in District Kurnool, Andhra (pl. XX). It is a Minor Rock-edict of the emperor, and its contents are almost identical with those of its counterpart at Yerragudi, 20 miles away in the same area.

BRAHMI INSCRIPTION FROM AMARAVATI.—A marble slab with only one line of a Brahmi inscription, purporting to record the gift of a coping stone for the railing by a princess Sammali, was found at Amaravati, District Guntur.

BRAHMI INSCRIPTION FROM SALIHUNDAM.—A stone, obviously forming part of the top-frieze of the exterior surface of the drum of the Mahachaitya at Salihundam, District Srikakulam, bore the inscription ***Dhamma-rano Asoka****-sirino* in the second century A. D. characters (pl. XVI B).

INSCRIPTION OF GUPTA AGE FROM RAJASTHAN.—An inscription from the Bhramara-mata temple near Chhoti Sadri, District Udaipur, dated 547 or A.D. 490, revealed the existence of a royal family called Manavayani and of a ruler of that dynasty called Gauri (which might be a mistake for Sauri).

INSCRIPTION OF VISHNUGUPTA.—A rock-inscription of the Later Gupta Vishnu-gupta of the eighth century was found on the Kolua hill near Hunterganj in District Hazaribagh, Bihar.

COPPER-PLATE OF INDRAVARMAN.—A copper-plate record of Indravarman of the Eastern Ganga dynasty, dated in the year 97 of the Ganga era, was discovered at Urajam, District Srikakulam. As the last known date of the ruler was till now the year 9I, the present inscription extends his rule by another six years.

COPPER-PLATES OF EASTERN GANGA DYNASTY.—This charter, belonging to the reign of Kali-Vishnuvardhana or Vishnuvardhana V, was found at Cheruvu-Madhavavaram, District Krishna. Though the record is undated, its importance lies in the fact that it is the only record that can be definitely said to have been issued by that king.

PRAKRIT COPPER-PLATES OF HASTIVARMAN.—A set of copper-plates with a Prakrit inscription belonging to Hastivarman was found at Penukonda, District West Godavari. Hastivarman may be one of the two Salankayana rulers of that name.

COPPER-PLATES OF ABHINAVADITYA.—The Director of Archaeology, Mysore, sent to the Government Epigraphist for examination a set of copper-plates recording the grant of the village Nelkunda in the Uchchasringa *vishaya* by Abhinavaditya of the Chalukya family, son of Adityavarman and grandson of Paramesvara, i. e. Pulakesin II.

COPPER-PLATES FROM KALAHANDI.—The Raja of Kalahandi kindly handed over to the Government Epigraphist a number of copper-plates for examination. One

of them was a record of the Eastern Ganga king Vajrahastadeva of the Ganga year 383, introducing for the first time a king called Anantavarman Vajrahastadeva, described as a son of Bhupendravarman.

INSCRIPTION FROM BHAILLASVAMIN (Bhilsa).—An inscription in the Gwalior Museum revealed that the temple of Bhaillasvamin, the Sun-god of Bhilsa, existed in A.D. 878. Prior to this there was no evidence of the existence of such a temple before the tenth century.

RASHTRAKUTA RECORD FROM MADHYA BHARAT.[1]—A stone inscription belonging to the eighth century and recording the name of a Rashtrakuta ruler Nannaraja was found at Indragarh, a ruined palace near Bhanpur.

KADAMBA GRANT FROM SADASIVAGAD.—A copper-plate of the reign of Vijayaditya II of the Kadamba family of Goa, dated in the Saka year 1102, was found at Sadasivagad near Karwar, District North Kanara. It is the first record mentioning the independent rule of the Kadamba princes.

KALACHURI INSCRIPTION FROM JABALPUR.—A large stone inscription of the time of the Kalachuri ruler Vijayasimhadeva was discovered at Jabalpur, Madhya Pradesh. On examination it turned but to be the Gopalpur inscription, noticed nearly a century ago but never properly published.

PALA INSCRIPTION FROM BIHAR.—An examination of a plaster cast of the well-known Jayanagar image inscription showed that it recorded the installation of the goddess *Bhattarika* Purnesvari or Punyesvari at Champa in the thirtyfifth year of Palapala.

INSCRIPTION OF YASAHPALA.—An image inscription of a chief named Yasahpala was found at Lai near Lakhisarai in District Monghyr, Bihar. It is dated in the year 32, apparently of the regnal reckoning of the chief's overlord, who, there are reasons to believe, was the Pala king Palapala.

METAL IMAGE INSCRIPTION OF BALLALASENA.—A metal image of Surya, recovered from an old tank at Sanokhar in Bhagalpur District, Bihar, was found to bear an inscription of the ninth year of Ballalasena. This is the first genuine evidence pointing to the expansion of Sena rule over east Bihar.

COPPER-PLATES OF VISVARUPASENA.—The Madanpara copper-plates, which are one of the three known records of the successors of Lakshmanasena of Bengal and which were believed to be lost soon after their publication, were recently traced in the Dacca Museum. A re-examination of this record and the published facsimile of the Idilpur plates, the second of the three records, also believed to be lost, showed that both the charters had been originally issued by king Suryasena, who was a son of Visvarupasena and ruled for a few years when his father was temporarily incapacitated to rule before the fourteenth year of his reign. In that year of the father's reign the name of Suryasena was erased and that of Visvarupasena re-engraved in its place in both the records. *Kesavasena* is a wrong reading for what really is the re-engraved word *Visvarupasena.*

TERRACOTTA GRANT FROM BIHAR.—A terracotta plaque was found in a village in Begusarai Sub-division of District Monghyr, Bihar. On the reverse it bore the

1 Information from the Director of Archaeology, Madhya Bharat State.

seal-impression of a person named Suhmaka, while an inscription on the obverse recorded the donation of a lotus (probably of some precious metal) made by three persons in favour of a deity in the year 67, presumably of the Lakshmanasena era. It is likely that while copper-plates were used for registering grants by rulers and members of the aristocracy, the commoner people used terracotta plaques.

YADAVA INSCRIPTIONS FROM HYDERABAD.—Six inscriptions, ranging in date from A.D. II44 to I240, were found near Mominabad in Hyderabad. Five of them recorded land-grants in the reign of the Yadava Simghana II and the sixth one a grant by Udayaditya, a *maha-mandalesvara.*

RAJPUT RECORD FROM RAJASTHAN.—An inscription from Toda Raisingh in Jaipur of the year I604 (A.D. I547) showed that Rana Udayasimha, son of Sangramadeva, ruled over the Kumbhalner kingdom as a subordinate of Asalemasahi, son of Patisaha Serasahi Sura, i.e. the Sur king Islam Shah, son of Sher Shah.

TAMIL INSCRIPTION OF FARRUKHSIYAR.—An interesting inscription, giving Hindu titles for a Muslim king, was copied at Sholingur in North Arcot District, Madras. It is dated A.D. I7I6 and refers to the Mughul emperor Farrukhsiyar.

OTHER INSCRIPTIONS.—The office of the Government Epigraphist for India copied and examined three hundred and eightytwo stone inscriptions and twenty-three copper-plate charters, only some of the more important of which have been noted above. The following stone inscriptions also deserve notice: (i) Maski inscription of the Western Chalukya Jayasimha II ; (ii) Balgeri inscription of the Kalachuri Bijjala II; (iii) Mudgal inscription of the Vijayanagara king Krishnadeva Raya; (iv) Vengal inscription of the Chola Kulottunga I: (v) Srirangam inscription of the Telugu-Chola Tammusiddha ; and (vi) Srirangam inscription of Lataraya-Rahuta Vallabha. Of the copper-plate inscriptions, mention may be made of: (i) Moti Machiala plates of Dhruvasena I ; (ii) Moti Machiala plates of Dharasena II; (iii) copper cover from Sanokhar; (iv) Dhokegali plates of the Western Chalukya Somesvara IV ; (v) Bilaigarh plates of the Kalachuri Pratapamalla ; and (vi) Purushottampur plates of the Sailodbhava Madhavavarman.

ARABIC AND PERSIAN INSCRIPTIONS.—The Assistant Superintendent for Arabic and Persian Inscriptions copied about one hundred and fifty inscriptions, mainly from parts of Andhra, Bihar and Saurashtra, ranging from the Tughluq to the late Mughul periods. Out of these, about thirty were selected for study and publication.

4. PRESERVATION OF MONUMENTS

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In I953-54 a large part of the resources of the Department of Archaeology-was necessarily diverted to the repairs and maintenance of the monuments taken over in I953. Important monuments as at Ajanta and Ellora in Hyderabad, Mandu in Madhya Bharat, Belur and Halebid in Mysore and Sanchi near Bhopal were attended to with great care. In addition, all types of monuments—megalithic burials, rock-cut temples, structural temples, Buddhist edifices, tombs, mosques, forts, palaces, excavated remains, painted surfaces, inscriptions, sculptures and carvings—received their due share of attention.

The conservation-works of outstanding interest carried out during the year under review are described below. Repairs executed by the Circles of the Department of Archaeology to monuments of national importance are noticed first, followed by those executed by the State Departments to the State-maintained monuments.

A. MONUMENTS OF NATIONAL IMPORTANCE

NORTH-WESTERN CIRCLE

Delhi

KOTLA FIROZ SHAH AT DELHI.—Like many other monuments in Delhi, this citadel, occupied by refugees for about two years, was cleared of all squatters. The roads were properly repaired; low sections of the walls were raised on the old lines to check trespass; joints where mortar had fallen out were filled and pointed, and the rough rubble-stone paving near the main entrance was repaired.

HUMAYUN'S TOMB AT DELHI.—*Dassa* stones, which were scaling off and decaying for some time, thus presenting a shabby appearance, were replaced with good red sandstone from Tantpur quarry, finely dressed and carved, making a close match with the original. Other stones which were disturbed and out of line were re-set in lime-cement mortar, using copper clamps as required.

ROSHANARA BARADARI AT DELHI.- Much of the stone-flagged flooring was missing and damaged. The flooring and the dwarf-walling were replaced with new chisel-dressed slabs and set in coloured cement-mortar closely matching with the original.

SAFDARJANG AT DELHI.—The *baradari* on the roof of the gate-house of Safdar-jang, showing signs of cracking, were strengthened by reinforced concrete anchor let into the thickness of the roof.

QUTB AT DELHI.—Overhanging portions of the Khilji college and the northern and southern walls of the tomb were carefully dismantled after shoring and strutting' the original sound masonry. Some of the bulged portions of eastern fortification-wall were dismantled and re-built.

CAUSEWAY AT ADILABAD, TUGHLAQABAD.—Some of the gaps in the causeway, which held up the water of the lake between Adilabad and Tughlaqabad, were cleaned and re-made, matching with the adjacent area. The northern end of the causeway, which was in a dangerous condition, was repaired and strengthened.

HAUZ KHAS AT DELHI. — The monument was repaired by pointing and grouting the cracks.

Panjab

KANGRA FORT.—Repairs to the various sections of the fort, such as Jahangiri gate and its archway, were carried out in fine-dressed and rubble-stone masonry with the best lime-cement mortar matching with the original. Masonry which had bulged out due to root-stumps was re-built in chisel-dressed stone masonry and rubble-work. The cavities in the masonry of mosque were sealed off with cement-grout and replaced by masonry matching with the adjacent surface.

ROCK-CUT TEMPLE AT MASRUR, District Kangra.—Dislodged walls were re-built and cracks in walls were grouted by gravitation-method after fixing copper clamps in molten lead.

BAIJNATH TEMPLE AT BAIJNATH, District Kangra.—In this shrine the joints were grouted after the proper raking out of weeds and finished with pointing to match, with the original.

NORTHERN CIRCLE

Uttar Pradesh

TAJ MAHAL.—At the Taj Mahal several important works of conservation were undertaken. The repairs to the facades of the mausoleum consisted of: (i) pointing open joints of the marble facing; (ii) re-setting loose inlay-pieces and inlay-bars ; (iii) inserting new inlay-bars; (iv) chiselling fractured portions on the facades and intrados of the *sahanchis* and inserting new *bidis* ; (v) re-laying floors of upper *sahanchis* in the facades with I½ in. cement-concrete over 3 in. lime-concrete, etc. A gang of engravers on daily labour has been employed for inserting new inlay-pieces in the ornamental bands of the turrets.

The Survey of India, at the request of the Department, checked the vertica-lity of the *minors*. The results of the checking did not indicate any appreciable change.

FORT AT AGRA.—On the marble ceiling of the outer compartment of Musam-mam Burj were noticed a number of fractured marble slabs caused by the rusting of plate-girders in the ceiling due to moisture percolating from the roof, making it necessary to render the roof safe. Originally the ceiling had been roofed with

long marble beams, but in recent times, when repairs were carried out, the ceiling was re-done with marble slabs inserted in the lower flanges of plate-girders, which were used for the first time in the monument. Owing to the non-availability of such large beams even now, the ceiling was re-done in the same manner after removing the fractured slabs. The work was not only a complicated one but also involved a special technique of conservation.

Under the scheme of annual repairs extensive repairs were carried out in the fore-court of the Moti Masjid by way of underpinning and pointing open joints of masonry. The coping stones of the parapet were re-set and watertightening the roof was carried out extensively.

MONUMENTS AT FATEHPUR SIKRI, District Agra.—Owing to the bulging of certain portions of the *dalans* of the Dargah of Shaikh Salim Chishti on the outer side it was decided to fix tie-rods at the springing of domes in the south-east corner and all along the southern side of the *dalan* through the cells and on the parapet over the roof to bind the structure against any displacement. The inner facing of the city-wall to the south of the Agra Gate fell many years ago. Vertical pillars were erected at intervals to support the overhanging terrace of the wall. A portion of the wall running to a length of 60 ft. was repaired. The work is in progress. The parapets, retaining walls and *partris* of the roads within the protected area were repaired, brick-edging was renewed and the drains were pointed.

AKBAR'S TOMB AT SIKANDARA.—The re-building of the enclosure-wall, which had been taken up in the preceding year, was completed.

IMAMBARA IN GULAB BARI AT FAIZABAD.—The Gulab Bari consists of the main tomb of Nawab Shujauddaula, the Imambara and the mosque. The roof of the northern compartment of the Imambara collapsed showing a double roof, the lower one being flat brick-arched and the upper consisting of wooden beams and planks. The re-roofing of the compartment was taken in hand during the year and stone slabs on steel joists set in cement-mortar were used to form the new roof.

EXCAVATED REMAINS AT KAUSAMBI, District Allahabad.—The deep pits in the excavated remains at Kausambi had to be filled up to prevent cattle and straying men from falling into them.

Vindhya Pradesh

KHAJURAHO, District Chhatarpur.—The groups of temples at Khajuraho having been taken over to be Centrally managed, their conservation was duly taken in hand. The work of fencing the entire area of the temples into different groups and fixing expanded-metal shutters to the temples was completed.

MID-EASTERN CIRCLE

Bihar

RAJGIR, District Patna.—Extensive repairs were carried out to the Mahadeva temple on Vaibhara hill. Other important repairs included the removal of decayed

concrete from the floor of the Jaina shrine and tracing and conserving the walls of the New Fort with masonry.

NALANDA, District Patna.—Structural repairs were executed to the exposed and undermined remains of the monasteries and shrines. The other repairs included the watertightening of parapet-walls in toned lime-concrete and making good the hearting at places in lime-mortar and surface-dressing of the approach-road to the site.

MAKHDUM SHAH DAULAT'S TOMB AT MANER, District Patna.—The exquisite carvings on the ceiling of its verandah, which were showing signs of decay due to leakage through the terrace above, were treated with chemical preservatives after renewing the concrete of the terrace at the remaining four corners (pl. XXI).

KUMARAHAR, District Patna.—Steps were taken to conserve the original layout of the Mauryan pillared hall and keep the water-logged site dry.

ROHTAS FORT, District Shahabad.—Breaches in the compound of Habas Khan, Baoli and Bangla Bagh Gate were made good in rubble-stone masonry set in mud-mortar. The roof and floor of Shakhi Sultan's tomb were renewed with lime-concrete. Toned recessed pointing was also done to the palace-buildings.

Uttar Pradesh

SARNATH, District Banaras.—Extensive repairs were carried out to the excavated remains at Sarnath. The top of the Dhamekh Stupa, overgrown with rank vegetation, was cleared and the joints filled in with toned lime-mortar. The salt-eaten portions in the walls of the votive *stupas* and shrines were taken out and re-built in lime-mortar matching the original.

KASIA, District Deoria.—Important repairs included the underpinning of walls of monastery site D at places in lime-mortar and the filling of cavities in the walls of *stupas* and monasteries with toned lime-concrete after taking out the roots plants.

EASTERN CIRCLE

West Bengal

BIRBHANPUR, District Burdwan.—In order to afford protection from spoliation by rain-water etc. of a mesolithic settlement discovered at Birbhanpur (above, p. 6) and to preserve the geological context of the site, a corrugated-iron shed was erected over the trench and notice-boards indicating the importance of the site were fixed.

BANGARH, District West Dinajpur.—The excavated sites at Bangarh were conserved by the replacement of the missing bricks of the walls, necessary underpinning and watertightening of the exposed wall-tops.

BAISGASI WALL AT GAUR, District Malda.—-The fallen portions of the wall were re-built with ancient bricks in cement-mortar to match the existing work.

TEMPLES AT VISHNUFUR, District Bankura.—The scattered group of temples received due attention. Repairing cracks, re-laying lime-concrete in the badly-damaged floorings of several temples and re-doing the damaged roof of the Radha

Govinda temple were the main items of work. Some of the missing ornamental terracotta plaques in the Jorbangla temple were replaced with plain tiles cut to size, matching adjacent decorations.

Orissa

SUN-TEMPLE AT KONARAK, District Puri.—A beginning of the implementation of the recommendations of the Konarak Temple Committee (which met last in February I953) was made. While the preliminaries, such as collection of materials required for the work and clearance of sand as an experimental measure, etc., were carried out in I952-53, attention in I953-54 was solely concentrated on the clearance of sand and the re-construction of the dilapidated compound-wall.

A gateway of khondolite was exposed on the south while clearing sand above the compound-wall. Traces of a brick temple were also discovered to the south of the Mayadevi temple. This will be completely exposed in due course.

The other recommendations of the Committee, viz. watertightening of the entire temple from outside including grouting and pointing, dismantling of old concrete from the tops of walls and re-terracing, rectification of slopes by chiselling, removal of rusted iron clamps and their replacement by copper ones and the opening of air-vents, will be taken up this year. It has been decided to use ironite as the waterproofing medium.

Assam

SIBDOL AT SIBSAGAR, Assam.—The Assam P.W.D. has now supplied the Kohima stones required for the re-construction of the wall of the Sibdol Temple at Sibsagar, which had been badly damaged by the earthquake of I950, The stones had to be quarried from Kohima in Manipur State and transported to Sibsagar, and this involved a great deal of time and trouble. The stones thus brought to the site were to be chisel-dressed to size, and for this purpose expert masons had to be imported from Manipur. During the year under review, three hundred and fifty pieces of stones including ten pillar-blocks were dressed up to the required size and standard. The fallen brickwork in the main pinnacle of Sibdol was partly built up.

SOUTH-EASTERN CIRCLE

Andhra

VIRABHADRASVAMI TEMPLE AT LEPAKSHI, District Anantapur.—The conservation-work consisted of: (i) construction *pucca* drain, II5 ft. long; (ii) concreting the floor of the *yagasala* ; (iii) provision of automatic shutters to the entrance of the *yagasala* ; (iv) providing granite-flagging on either side of the main entrance in conformity with the existing flagging; (v) providing a kerb-wall, 73 ft. in length, in coarse rubble-masonry; and (vi) providing steps under the archway to enter the inner *prakara.*

PALACE AT GURRAMKONDA, District Chittoor.—This monument, which is mainly a structure erected on timber-supports, was conserved by renewing the wooden

pillars and roof of the terrace. The fallen portions of the *chhajja* were restored. The roof was plastered and rendered watertight.

BUDDHIST SITES.—The Buddhist sites at Salihundam, District Srikakulam; Ramatirtham, District Visakhapatnam; Sankaram, District Visakhapatnam; and Kapavaram, District East Godavari, received attention during the year. Jungle-clearance at these sites was carried out and foot-paths and approaches were repaired. At Sankaram new steps to a length of 300 ft. were provided from the bottom of the hill to the *stupas* at the top.

Madhya Pradesh

GROUP OF TEMPLES AT MARKANDA, District Chanda.—The groyne on the river-side was pitched with flag-stones in cement-mortar.

Hyderabad

GOLKONDA FORT.—The famous fort of Golkonda, 6 miles from Hyderabad, is well-known as the capital of the Qutb Shahi kings, though traces of early Hindu architecture are extant inside the fortress. The annual repairs carried out here consisted of jungle-clearance, maintenance of pathways, clearance of debris from many houses and rendering of tops of exposed walls watertight.

CHAR MINAR AT HYDERABAD.—The Char Minar, in the very heart of the city, was erected in I59I by Muhammad Quli Qutb Shah to commemorate the cessation of plague. The repair done to this consisted of: (i) re-pointing of the ground-floor ; (ii) repairs to the damaged steps leading up the *minars*; (iii) re-fixing the door-frames properly at the entrance to the *minars*; and (iv) re-painting of the door-frames and panels.

WARANGAL FORT.—The city and fort of Warangal were founded by Pratapa Rudra, a Kakatiya ruler, in the twelfth century. The conservation-work done here consisted of jungle-clearance and building of the buttresses in cut-stone masonry over cement-concrete foundation for the eastern gateway and stacking of fragmentary sculptures.

THOUSAND-PILLARED TEMPLE AT HANAMKONDA, District Warangal.—This temple, built in II62, is a remarkable example of medieval architecture. The conservation-work done here consisted of : (i) re-fixing the disturbed stone slabs of the floor; (ii) jungle-clearance; (Hi) repairs to its water-tank ; and (iv) provision of a small garden.

RAMAPPA TEMPLE AT PALAMPET, District Warangal.—This twelfth-century temple is well-known for its bracket-figures. Jungle-clearance, pointing and re-fixing of some stone floor-slabs formed the main conservation-measures undertaken here.

SOUTHERN CIRCLE

Madras

MONUMENTS IN FORT ST. GEORGE, MADRAS.—The Old Officers' Mess, which was originally the Exchange of the East India Company and now houses the Fort

Museum, came in for extensive repairs during this year, since no major repairs had been done to it either during the War or after it had been taken over by the Department.

MAHABALIPURAM, District Chingleput.—Of the group of monuments at Mahabalipuram the work of reinforcing the groyne-wall in front of the Shore temple, which had developed breaches as a result of successive monsoons, was continued in its third and final stage through the State Public Works Department which had the benefit of the advice from the Marine Engineers of the Madras Harbour. The method of reinforcement consisted of casting 2 ft. 6 in. pre-cast cement-concrete cubes linked with each other in groups and dumping them regularly to the east of the existing groyne-wall to serve as a buffer against the impact of the sea and eventually to settle down (pl. XXII). Simultaneous reinforcement of the damaged parts was done on the inside using quick-setting cement-concrete *in situ.* Vegetation wind-screens were planted round the Five Rathas and the rock-cut Tiger Cave at Saluvankuppam to minimize the direct effect of the salt-laden sea-breeze.

GINGEE, District South Arcot.—Leak-repairs and watertightening were carried out on the terraces of the front approach *mandapas* the main inner fort of Gingee and the domes of the subsidiary shrines on Krishnagiri and Rajagiri.

BRIHADISVARA TEMPLE AT TANJORE.—In the *vimana* of the temple the decayed flooring inside the first three storeys was removed and neatly re-laid in lime-mortar. Similar to the ground floor, the first storey has a circumambulatory passage containing the various dance-poses of Siva. These sculptures, badly disfigured by bat-droppings, were cleaned and photographed. All the openings in this and the higher floors were rendered bat-proof.

BRIHADISVARA TEMPLE AT GANGAIKONDACHOLAPURAM, District Tiruchirapalli.—The Brihadisvara temple at Gangaikondacholapuram has all the time been presenting the appearance of mason's quarry or workshop because of the numerous heaps of stone and debris that litter the quadrangle all round the imposing structure. After some major repairs to the interior of the *vimana* and the axial *mandapa,* the clearance of open courtyard, which had not only been covered with odd and unsightly heaps of stones but had undulating levels affecting drainage, was an important item of work done this year. This revealed the foundations and lay-out of an extensive cloister all round the inside of the compound-wall, containing, as the Tanjore temple, a number of subsidiary shrines. This showed that, like its counterpart at Tanjore, this temple had essentially the same plan and magnitude. The northern *gopura,* the only remnant showing the double-storeyed nature of the cloister, and the sub-shrines all round were re-constructed partially on its sides in order to sustain the extant portions and rendered watertight.

SITTUR, District Tiruchirapalli.—Clearance of earth all round the Tiru-vighnesvara temple at Sittur, an early Chola monument, was done, and the massive masonry buttresses, hiding many of the inscriptions on its walls and standing quite apart from the structures, were removed.

VELLORE FORT AND JALAKANTESVARA TEMPLE, District North Arcot.—The important items of work in the Jalakantesvara temple, a fine Vijayanagara monument, included repairs to the old drain at the south-east corner of the ancient kitchen of the temple, arrangement and mounting of all loose sculptures along one of the corridors of the temple and providing bat-proof shutters for the openings in the *vimanas.* The fine fort surrounding this temple also received attention. All the open cracks

of the brickwork battlement on the top of the stone walls were grouted and pointed, and the many chambers, serving as sentry-boxes along this line, were cleared and provided with permanently-fixed grill-screens to allow the entry of light and air.

MUDABIDRI, District South Kanara.—The portion of the Chowtar's palace at Mudabidri contains some very fine wood-carving on the pillars and ceilings, The clay found in the interstices between the various carved plaques was removed and the joints, in the substratum of which white-ants thrived, cleaned.

Travancore-Cochin

ST. FRANCIS CHURCH AT COCHIN.—In the St. Francis Church in the island of Cochin, the old plaster, which had weathered owing to saline action and was peeling off or dropping down to powder, was completely removed and the surface re-plastered.

ANJENGO, QUILON.—Work on this small fort on the sea included wholesale vegetation-clearance, tidying up of the inner quadrangle, plastering over portions where the old plaster had gone, exposing the core to the moist sea-air, and provision of strong gates in place of the old damaged ones.

Mysore

RANGANATHASVAMI TEMPLE AT SERINGAPATAM, District Mandya.—The inner enclosure of the Ranganathasvami temple at Seringapatam was opened up and the drain repaired and restored to working conditions. In addition, pointing was done wherever necessary on the floors of the *prakara.* The *vimana* was cleared of all menacing vegetation and the gaps closed after cleaning the remnants inside with tree-killer.

JUMMA MASJID AT SERINGAPATAM.—The broken edge of the eave-plaster on the southern side of the first floor was re-done in accordance with the old design and vegetation growing on the top of the two tall brickwork *minors* was removed.

DARIA DAULAT BAGH AT SERINGAPATAM.—In this summer-palace of Tipu Sultan, which contains interesting paintings, the first item of importance that demanded immediate attention was the leaky roof, which was peeled off to the necessary depth and re-laid so as to make it completely watertight.

KESAVA TEMPLE AT SOMANATHAPURA, District Mysore.—In this temple, which is a fine example of Hoysala architecture, the component stones of the *mahapadma* and *kalasa* on the top of the main *vimana* were found dislodged from their position, exposing large gaps, which were permitting the entry of water into the shrine below. The top-course had, therefore, to be dismantled and re-set in position. The entire roof of the *navaranga* in front was renewed as the old one had been very leaky, affecting the exquisitely-carved ceiling below.

TEMPLES AT HALEBID, District Hasan.—All the external openings in the Kedaresvara temple had to be provided with expanded metal mesh frames to prevent the entry of bats. The precincts of the Hoysalesvara temple were cleaned up, and the next stage of the work will be the collection of all loose sculptures and

carved stones and their display in a sculpture-shed to be provided at a convenient place inside the compound.

CHENNAKESAVA TEMPLE AT BELUR, District Hasan.—The flooring around the kitchen-block in the premises of this great Hoysala temple and also in certain parts of the *prakara*, which was in a bad state of repairs, was re-laid with new stone slabs wherever necessary and pointed at other places.

TIPU SULTAN'S PALACE AT BANGALORE.—The old broken wooden stairs in the rear and the damaged and rotten cusps of the arches inside were renewed in accordance, with the old design.

FORT AT BANGALORE.—The massive doors of the Delhi and Mysore Gates of the fort, which had been broken and dislodged from their bottom-sockets, were repaired.

SOUTH-WESTERN CIRCLE

Hyderabad

ELLORA.—The steps leading to the caves and the approach-roads were improved and concrete floorings were provided to a couple of the caves where the rock-floors had become disintegrated and undulating. Further repairs will be undertaken in accordance with a definite programme.

AJANTA.—Repair-works here consisted of the following items : (i) provision of a bridge connecting caves 20 and 2I ; (ii) securing the vertically-cracked pillars by iron straps ; (iii) renewing the missing portions of the pillars and jambs with R.C.C. in caves I5, 23 and 25 ; (iv) repairs to the parapet-walls in front of the caves ; (v) providing expanded-metal doors and fixtures for entrances and opening of certain caves ; and (vi) excavation of the top-drain no. 5 in continuation of the work previously done.

BIDAR.—The repairs included provision of lime-concrete floorings, the painting of wood and iron-work and repairs to steps.

Bombay

GOL GUMBAZ AT BIJAPUR.—The *dalans* facing the Gumbaz proper were improved : the flooring was concreted, cracks in the roof-terraces were filled in and made watertight and the fallen ends of the parapet-walls re-constructed.

JUMMA MASJID AT BIJAPUR.—The entrance-passages were provided with concrete floors and turnstile gates, the stone pavement in front of the prayer-hall pointed, the terrace over Aurangzeb's gate made watertight, stair-cases repaired and a screen with pulley-arrangements provided to safeguard the gold-colour paintings in the central *mehrab.*

VIRUPAKSHA TEMPLE AT PATTADAKAL, District Bijapur.—This eighth-century temple, built in the Dravidian style, was repaired. All cavities and open joints in the plinth and the superstructure including the *sikhara* were filled. The drainage-problem of the roof was also tackled.

SHIVNERI FORT AT JUNAR, District Poona.—The famous fort called Shivneri, marking the place of birth of Shivaji, was attended to. Notable items of work carried out included repairs to all the gates with their flank-walls and bastions, re-laying the terrace of the Ghodsala, improvement to the plinth-walls of the *janma-sthan* and provision of teak-wood frames with expanded metal for the two water-cisterns.

SHANWARWADA AT POONA.—A thorough clearance to remove all the debris of later buildings was made and hitherto-buried plinths were uncovered. The gang-ways were repaired and plastered with cement and the paths properly laid.

PATALESWAR CAVES AT POONA.—Repairs at the eighth-century Brahmanical caves called Pataleswar included the renewal of broken portions of the pillars of the Nandi pavilion and the *sabha-mandapa,* filling hollows in the floor and tarloiding the pro-fusely-leaking roof of the Nandi pavilion.

RAIGADH FORT, District Kolaba.—The place where Shivaji was crowned as an independent monarch was also included for special repairs, and various works were done to Maha Darwaza, Darbar Hall, Simhasana, Nagarkhana and the Jagdeswar temple.

ELEPHANTA, Bombay.—Some loose sections of the rock-facade were strength-ened, the approach-roads to caves 5 and 6 were repaired, a concrete channel pro-vided for the drainage of top-water and expanded-metal doors provided to the cells on either side in the main cave.

TEMPLE AT AMBARNATH, District Thana.—This temple, belonging to the twelfth or thirteenth century, was repaired by laying a concrete ramp all round the plinth to stop water-soakage in the foundation and fixing expanded-metal doors to avoid the nuisance of bats.

WESTERN CIRCLE

Bombay

BABA LAULI'S MOSQUE AT AHMEDABAD.—The mosque, built by Baba Lauli, a pious saint from Arabia, in the reign of Sultan Shah, was damaged during the heavy floods in the river Sabarmati in I950. The foundation and the brickwork were rebuilt to the floor-level of the mosque.

MANSAR TANK AT VIRAMGAM, District Ahmedabad.—The Mansar tank at Viramgam, constructed by Minal Devi, the mother of Siddharaja Jayasimha, is one of the largest masonry reservoirs of Gujarat. A I6-ft. wide platform was paved with masonry here.

BRICK MINARS AT CHAMPANER, District Panch Mahals.—Champaner, the former capital of Muhammad Begda, is studded with a number of mosques of the Gujarat style, among which is one with two brick *minars.* The domed roof and side-walls having collapsed, all that now remains of this mosque is a pair of 55-ft. high *minars* with beautiful mouldings in plaster. The bases of the *minars* were underpinned and fresh concrete flooring was provided.

TAMBEKARWADA AT BARODA.—The mansion of Bhau Tambekar at Baroda contains valuable paintings of the last two centuries. For effective protection from moisture, sun-light and birds, expanded-metal *jalis* were fixed to the front and back-verandahs of the first and second floors with waterproof canvas-curtains hung over them. The outer walls were also re-plastered with cement-mortar and painted with waterproof paint.

Saurashtra

TEMPLE AT GOP.—Clearance-work was done to the early Chaulukyan temple at Gop, belonging to *circa* fifth century A.D. and very important for the study of the development of temple-architecture in Gujarat.

Rajasthan

CHITORGARH.—The fort of Chitor, famous in the annals of Rajasthan, which encloses within its walls a variety of architectural edifices, such as gateways, palaces, temples, victory-towers, reservoirs and stables, ranging in date from the ninth to the sixteenth centuries, has been fast disintegrating due to neglect, growth of vegetation and other natural causes. Immediate repairs were carried out to the following five important monuments within the fort as a first step towards the implementation of a systematic conservation-programme : Rana Kumbha's palace-complex, Navlakha Bhandar, Sringar Chauri, Padmini's palace and Fatteh's palace.

MANDORE FORT, Jodhpur.—The most important monument in the Mandore fort is the remains of a Vaishnava temple belonging to the Gupta period, overgrown with vegetation and covered with debris. Vegetation was removed and the original plan of the temple was exposed by clearance. Repairs to the masonry of the remains of the *garbhagriha* were also undertaken.

GROUP OF TEMPLES AT BADOLI, Kotah.—These specimens of early medieval Hindu temple-architecture at Badoli were freed from vegetation and their fallen structural members recovered (pl. XXIII). About five hundred sculptured pieces belonging to the temple were brought to light.

CENTRAL CIRCLE

Bhopal

SANCHI.—Large-scale repairs were done to the Buddhist monuments at Sanchi. Extensive pointing was done to *stupas* I and 3 and temples I7, 3I and 45. The open court of Monastery 47, in which water stagnated, was provided with a flagstone flooring. The missing and shattered flagstones on the platforms of temples 3I and 45 were restored. The exposed walls of temple I8 were rendered watertight by re-laying the top-courses in toned cement-mortar. Expanded-metal shutters were provided to gates of temples I7,3I,32 and 45. The leaking roofs of temples 3I and 32 were rendered watertight by providing cement-concrete layers.

Madhya Bharat

MONUMENTS AT MANDU, District Dhar—The important group of monuments at Mandu was taken up last year for large-scale annual repairs, which included extensive jungle clearance on and round the monuments, re-conditioning of the approach-roads, and repairs to the dry-stone compound-walls, besides other petty repairs. Special repairs were done to Hoshang Shah's tomb, an imposing mausoleum of marble, built in the fifteenth century, which was found to be thickly encrusted with moss and lichen. The ugly encrustation was chemically cleaned from the main dome and corner-kiosks of the tomb, after filling up the cracks and fissures of the dome with cement-grout. The work of repairs to the extensive leaking terrace of the Dharmasala in the compound of Hoshang Shah's tomb, a fifteenth-century monument with mixed features of Hindu and Muslim architecture, was undertaken by replacing the dead and spongy lime-concrete with new lime-concrete over nearly half of the terrace.

KOSHAK MAHAL AT CHANDERI, District Guna.—The works included re-laying of new lime-concrete on the badly-leaking terrace of the third storey, water-tightening the tops of exposed walls with toned lime-mortar, filling the cavities in walls with toned lime-mortar and replacing keystones of arched windows and doorways.

SAIVA MONASTERY AT SURWAYA, District Shivpuri. —The repairs to this eleventh-century monastery consisted of watertightening the exposed top of walls and closing cavities therein and pointing open joints of the slabs of the flagged terrace.

Madhya Pradesh

BIBI SAHIB'S MOSQUE AT BURHANPUR, District Nimar—The main dome of this famous Faruqi mosque showed decayed plaster through which rain-water percolated into the fabric of the dome. The decayed plaster was replaced with fresh lime-plaster after the cracks in the dome had been sealed with cement-grout.

B. STATE-MAINTAINED MONUMENTS

HYDERABAD STATE [1]

Consequent on the transfer of the monuments of national importance in the State to the Centre, the responsibility of the Hyderabad State Department was restricted to the State monuments.

Petty repairs were carried out to KULPAK TEMPLE in Nalgonda District, where a local museum was also established for housing the loose sculptures and inscriptions. Clearance and petty repairs were effected to the old temples and other monuments at NAGAI SERAM and MALKHED in Gulbarga District. Similar works were carried out at GOLKONDA and HYDERABAD. Stray sculptures, inscriptions, etc., were removed from CHILKUR village near Golkonda and deposited in the local museum. Special

[1] Information from the Director of Archaeology, Hyderabad State.

repairs to MUSHIRABAD MOSQUE and its SARAI were brought to completion, and necessary repairs were also effected to **KHIRAT KHAN'S** TOMB and the GUN FOUNDRY in Hyderabad City.

Necessary repairs and general clearance were carried out to the NADIKONDA TEMPLE, a thirteenth-century Chalukyan structure in Nalgonda District. A campaign of eradication of rank vegetation and petty repairs was also carried out at MUDGAL FORT, where particular attention was paid to Bala Hisar and the main entrance-gate. The old wooden shutters of the gate, decorated with beautifully-carved panels, were fast-decaying due to white-ants. They were treated with chemicals and duly repaired. Necessary repairs were also executed to the roof and pillars of ANAGUNDI TEMPLES and UNCHAPPA MUTT.

MYSORE STATE [1]

At MAGADI the *gopuram* over the western Mahadvara gateway of the Ranga-nathasvami temple, which had collapsed some years back, is being re-constructed by the Mysore State Government at a cost of Rs. 40,000, the necessary funds being provided by the Muzrai Department.

RAJASTHAN STATE [2]

The State Department of Archaeology and Museums, Rajasthan State, attended to the following monuments : HEROES' HALL, MANDOR, Jodhpur; BHAND DEORA TEMPLE, RAMGARH, Kotah; and MOTI MAGRI RUINS of the palaces of Maharaja Pratap, Udaipur. Works at the following monuments were in progress : MINOR ROCK-EDICT OF ASOKA and MUGHUL GATEWAY AT BAIRAT, Jaipur; DEVALS OF MAHARAJA AJIT SINGH, REWAN-KI-CHOWRI and TOKESWAR IMAGE, MANDOR, Jodhpur ; and PANCHKUNDA CENOTAPHS of the rulers of Jodhpur.

VINDHYA PRADESH STATE [3]

A grant of Rs. 2,000 was sanctioned by the State Government of Vindhya Pradesh for repairs to the KESHAV SMARAK AT ORCHHA.

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[1] Information from the Director of Archaeology, Mysore State.
[2] Information from the Chief Superintendent of Archaeology and Museums, Rajasthan State.
[3] Information from the Vindhya Pradesh Government.

5. ARCHAEOLOGICAL CHEMISTRY

A. PRESERVATION OF MONUMENTS

The Chemical Branch of the Department attended to a large number of monuments with the objectives of arresting their decay due to natural causes and of cleaning and preserving painted surfaces. The following are some of the important works attended to by it.

KONARAK.—The Konarak Temple Committee had recommended the use of a suitable waterproofing material to be mixed with the mortar used for grouting, terracing, filling up voids etc. The choice has fallen, after some experiments and in consultation with the experts of the Committee, on ironite, which will now be utilized for the purpose.

TOGESWARI District Bombay Suburban.—Since the rock of the cayes is extreme ly soft bX volcanicash,7is fnherently vulnerable to the action of moisture and solubl sa?s.gThe pTblem of chemical preservation f *e ^SlTT therefore become extremely difficult, for no amount of ff J £ of gypsum is likely to arrest the deterioration of the ^f™;. ^^ seems to be the removal of the remaining sculptures from the caves tor preservation in a museum (below, p. 32)

moved by using dilute ammonia. I he cleanea sunatc 3
pulp treatment and washing with clean water tor the removal ot salt (

cally, and most of the sculptures and i were

KAKHHH! CAVHS, BOMBAV.~AI1 the ^f^^lX^n cally treated and preserved, and most of the important sculptures m caves were successfully conserved.

FATEHPUR SIKRI, District Agra.—As a result of the chemical treatment to the wall-paintings in Maryam Zamani House, the painted area in this monument was freed of dark varnish and age-old accretions and the original colours were uncovered. The paintings so cleaned were preserved.

SIKANDARA AND ITIMADUD-DAULA, AGRA.—The extensive wall-paintings were systematically surveyed and measurements taken as a preliminary to the framing of special repairs estimates of their chemical preservation.

BAGH, District Dhar.—The paintings at Bagh have undergone extensive decay and deterioration on account of heavy accretions of smoke, oily and tarry matter and action of hot gases on the paint-layer. Trial-experiments and research in the laboratory, however, led to the solution of this problem of the removal of accretions from the surface of the paintings. A formula was worked out whereby it became possible to remove the smoke without injuring the painted surface. Some exploratory work was conducted on the paintings in the caves in restricted areas, and the results were entirely satisfactory. Based on these experiments suitable methods for the chemical treatment and preservation of these ancient paintings have been recommended and a special repairs estimate framed for the execution of this important work.

TAMBEKARWADA AT BARODA.—The wall-paintings at Tambekarwada, executed in oil-colours, were obscure on account of the darkening of the thick varnish on the surface. As a result of chemical treatment the tones and depths of the original colours were brought to light and the pigments freed from the darkening varnish.

MAHAKALI TEMPLE AT CHANDA.—There are some very interesting early seventeenth-century paintings on the arched entrance to the main shrine inside this temple. It was considered necessary to take up the chemical treatment of these wall-paintings in a systematic manner with a view to removing the age-old accretions, preventing the flaking of the pigments and bringing out the details of designs by suitable chemical treatment. As a result of this work, about 60 sq. ft. of the painted surface, out of the total of 250 sq. ft., were chemically treated and preserved.

BADAMI, District Bijapur.—The paintings in rock-cut caves at Badami have undergone considerable damage and deterioration in the past. Exploratory work was conducted on limited areas with a view to devising suitable techniques and methods for the preservation of whatever remained of these famous frescoes. The work is in progress, and it is hoped that it will be soon completed.

AJANTA.—Some of the painted stuccoes in caves I and 2 were loosely holding on to the ceilings in such a manner that a mere touch was enough to detach them. It was considered necessary that these loose stuccoes should be consolidated and strengthened even prior to taking up the problems of general cleaning and preservation. The edges of the stuccoes were strengthened with a dilute solution of bleached shellac (instead of unbleached shellac that had been used here during the last thirty years) in rectified spirit. The edges were then filletted with plaster of Paris suitably coloured to a neutral tint by the addition of yellow and red ochres and lamp-black. Thus the painted surfaces were saved before being taken up for cleaning, consolidation and preservation under a comprehensive scheme.

ELLORA.—In the Kailasa cave large portions of the ceilings are covered with soot and oil. Experiments were made towards the elimination of the accretions to

find out the existence of paintings, if any, underneath and at one or two places traces of paintings were found.

AURANGABAD CAVES.—The work was of a preliminary nature, such as the mechanical removal of the superficial accretions.

MATTANCHERI PALACE AT TRAVANCORE.—The surface was cleared of accumulations and the ground prepared for the treatment of the wall-paintings.

TANJORE.—Two groups of paintings, viz. the Nayaka and the Chola ones, occur on the walls and ceilings of the circumambulatory passage surrounding the main shrine in the Brihadisvara temple at Tanjore. In some of the chambers of this passage an earlier and a more artistic layer of Chola paintings is covered over with the cruder Nayaka ones. The layers of Nayaka paintings on the north wall of chamber 5 were removed carefully and the underlying Chola layer was exposed. The work was extended to the eastern wall of chamber 7, including the jambs and returns, eastern wall of chamber 9, jambs and returns of chamber I0 and the south wall of chamber II. The upper layer was removed carefully, leaving the Chola layer intact. The edges of the exposed painted stucco were consolidated. The cleaning and preservation of the exposed painted layer are to be taken up.

'LEPAKSHI, District Anantapur.—As the first stage in the work of cleaning and preservation of the paintings in the Virabhadrasvami temple at Lepakshi, the paintings on the ceilings of the *natyamandapa* of twelve bays were taken up. They had been covered over with dust, dirt, cobwebs, soot, oil, insect-nests, insect-cocoons, insect-wax, etc. The paintings on six of the bays were cleaned, consolidated and preserved.

SOMAPALLE, District Chittoor.—The paintings on the ceilings of the *maha-mandapa* of the Chennakesavaperumal temple were loose, just sticking to the surface, and were covered over with all sorts of accretions. The paint-film and the painted stuccoes were consolidated with a weak solution of vinyl acetate applied at the edges. The surface was thus rendered safe and the accretions then removed with usual organic solvents. The surface was then given a preservative coating.

TIRUMALAI, District North Arcot.—The paintings occur on the ceilings and walls of the cells of the Jaina temple, formed by artificially raising walls under an over-hanging cliff. Besides the usual accretions found on these paintings, visitors had inked some of the outlines of the paintings in blue. The accretions were removed by organic solvents. The paintings were cleaned and preserved.

B. TREATMENT OF ANTIQUITIES AND MUSEUM-EXHIBITS

The laboratory of the Archaeological Chemist in India chemically treated and preserved several hundred antiquities, such as swords, daggers, pistols and other weapons belonging to the Panjab Government Museum, Simla. A large number of coins were cleaned for the Superintendent of Archaeology and Museums, Bhuvaneswar. Hundreds of iron objects and copper and silver coins found in excavations were also treated and preserved.

The laboratory of the Museums Branch attended to work of a varied nature. The treatment of more than fifty silk, cotton and paper paintings, belonging to the Central Asian Antiquities Museum and the National Museum, was undertaken. The cleaning, preservation and fixation of colours of fiftyfour panels of fresco-paintings of the former Museum were completed, and similar work on unexhibited frescoes was taken in hand. A number of textiles, copper, bronze and silver antiquities and objects of wood, bone, ivory etc., were treated, restored and preserved.

C. RESEARCH

SOIL-ANALYSIS.—In order to initiate studies in environmental archaeology the laboratory of the Archaeological Chemist in India was equipped last year for conducting work on soil-analysis and gravel-samples from excavations and sections in river-valleys. Several samples were collected from the archaeological strata at the prehistoric site at Bahadrabad near Hardwar. The samples were examined and the results thereof will be soon published. Samples from the sections at Rupar were also received for analysis and examination.

PETROLOGY.—A systematic petrological study was conducted on the rocks from Bagh, Jogeswari and Kanheri with a view to studying the mechanism of the weathering of rocks, so that suitable methods for the preservation of sculptures and inscriptions in the rock-cut caves at these places might be devised. The examination of the Jogeswari rock yielded results of particular significance. The rock is extremely soft, being volcanic ash, and is therefore inherently vulnerable to the action of moisture and soluble salts. The presence in the rock of crystals of pyrites gives the clue to the origin of gypsum, which is seen in the form of layers of considerable thickness at several places. The oxidation of pyrite leads to the formation of sulphuric acid, which, in turn, attacks the calcite present in the rock. This results in the formation of gypsum, which undergoes solution and crystallization depending on the humidity-conditions inside the caves and is hastening the decay and deterioration of the caves, for there is no doubt that due to the percolation of rain-water the gypsum has moved from outside into the interior of the caves. Consequently, it is felt that no amount of chemical treatment will arrest the action of gypsum on the sculptured surface, and it has therefore been recommended above (p. 29) that the sculptures should be detached and removed to a museum before it is too late.

ANCIENT CERAMICS.—Some investigation into ancient ceramics, glass, pottery and other ceramic materials was instituted last year. A large number of glass and paste specimens were received from the Deccan College Post-graduate and Research Institute, Poona, for analysis. The results, which will be published in due course, are interesting.

MISCELLANEOUS ANALYSES.—The laboratory of the Museums Branch conducted experiments and investigations on the behaviour of preservatives with different solvents, and their resistance to moisture. Analyses of more than thirty samples of metals, stone and commercial preparations were completed.

6. MUSEUMS

A. NATIONAL MUSEUM, NEW DELHI

The organization of the National Museum remained virtually unaltered during the period under review. The work of setting up decent pedestals for sculptures progressed, and twelve wall-cases and six table-cases were provided for better display.

On the occasion of the last meeting of the Central Advisory Board of Archaeology, an exhibition of excavated antiquities from all over India was organized. This was accompanied by an informal symposium on the problems of Indian archaeology, in which all excavators took part.

The Guide Lecturers continued to deliver lectures twice a week on various subjects connected with the Museum.

Of the acquisitions, mention may be made of the following: (i) a *thanka* from Sam-ye monastery in Tibet, said to have been founded by Padmasambhava, handed over to Professor V. V. Gokhale at the time of his visit to Tibet ; (ii) an image of Parvati from Baijnath, District Garhwal ; (iii) a pair of inscribed wooden door-leaves from the Sun-temple at Katarmal, District Almora; (iv) five hundred valuable Sarada manuscripts ; (v) a gold coin found in the excavation at Sisupal-garh; (vi) a Kashmiri shawl, exquisitely woven and depicting scenes from the Khamsa-i-Jami on the borders ; and (vii) four thousand and ninetynine gold, silver and copper coins from the Narayani hoard in the Cooch Bihar Treasury, generously presented by the Government of West Bengal. The Prime Minister continued to patronize the Museum and presented to it a few I.N.A. objects, including the personal sword of Sri Subhas Chandra Bose and two plaster enlargements of Gupta coins received by him from the Governor of Uttar Pradesh.

Most of the objects on loan from the Indian Museum were made ready for being returned to that Museum.

B. ARCHAEOLOGICAL SECTION, INDIAN MUSEUM, CALCUTTA

The additions to the Museum included (i) a Vishnu image of the Trivikrama variety, of late Pala period, from Baraset, 24 Parganas, and (ii) fortysix silver coins, both pre-Muslim and Muslim.

The six Hoysala sculptures acquired for the Museum some time back were set up in the galleries.

A descriptive catalogue of the collection of *farmans, sanads* and *parwanas* was nearing completion, and the preparation of supplementary catalogues of Hindu and Muslim coins was in progress. A Guide to the Archaeological Galleries of the Museum by the Superintendent of the Section was published by the Trustees of the Museum.

C. CENTRAL ASIAN ANTIQUITIES MUSEUM, NEW DELHI

The Central Asian Antiquities Museum, which had been thrown open once more to the public on the I4th August, I953, after an interval of several years, continued to develop. Additional exhibition-space was made available by screening off one of the verandahs. Some antiquities from the reserve-collection, e.g., a few silk painting, pottery, stucco figurines etc., were displayed for the first time with suitable labels. The work of providing individual and introductory labels progressed.

A few show-cases of a new design were introduced. Perspex, as a substitute for glass, proved very useful for show-cases, particularly the semicircular ones placed in the corners of the galleries. A counter for the sale of publications was provided.

D. OTHER DEPARTMENTAL MUSEUMS

DELHI FORT MUSEUM.—The stone inscriptions in the Museum were arranged on suitably-built pedestals.

SARNATH MUSEUM.—The gaps left in the galleries by the removal of a few statues to the National Museum were filled up by sculptures from the reserve-collection, and further improvements were effected in the galleries.

NALANDA MUSEUM.—Two stone slabs, the former depicting the Buddhas in three rows and the latter showing the *nirvana* scene, both of early medieval times, were added to the Museum. The galleries were and are being provided with suitable maps, charts and photographs to illustrate the history of Nalanda.

FORT ST. GEORGE MUSEUM, MADRAS —A gallery of about forty rare-prints or engravings, made one hundred and seventy years ago from the original etchings of two famous British artists, Thomas and William Daniell, including prints depicting the views of Fort St. George and its monuments, the rock fort-temple at Tiruchirapalli as seen from the Kaveri and the Brihadisvara temple at Tanjore, was added. Three types of English porcelain, numbering twentyfour pieces, manufactured at Canton and in England between I770 and I820, specially for the East India Company with their Coat of Arms and motto, were presented by Shri Shri Prakash, Governor of Madras. The numismatic section of the Museum was enriched by the addition of more than four hundred coins of the European period, including silver, lead and copper ones of such mints as Madras, Arcot, Pulicat, Pondicherry and Negapatam. About two hundred pieces of ordnance were presented by the Central Ordnance Depot at Allahabad, the Senior Prince of Tanjore and the Raja of Kangudi.

NAGARJUNAKONDA MUSEUM.—Fresh labels in English and Telugu were prepared and the re-arrangement of the sculptures progressed.

AMARAVATI MUSEUM.—Steps were taken to develop the sculpture-shed at Amara-vati into a regular site-museum by the re-arrangement of exhibits and the provision of labels.

KONDAPUR MUSEUM.—The Museum at Kondapur, established in I94I and housing a rich collection of antiquities found in the excavations at Kondapur, one of the most extensive habitation-sites in the Deccan and south India, was transferred from the Hyderabad Government to the Government of India and placed under the

Museums Branch of the Department. Steps were taken to provide suitable show-cases and labels, to prepare registers etc., and to form a reserve-collection in a classified way. A scheme of adding to the existing building was also prepared.

SANCHI MUSEUM AND JARDINE MUSEUM, KHAJURAHO.—These museums were taken over from the Bhopal and Vindhya Pradesh Governments respectively. Steps were taken for their eventual improvement.

HAMPI MUSEUM.—With a view to organizing a full-fledged site-museum at Hampi, the ancient Vijayanagara, a large number of sculptures lying loose all over the ruins were collected in the Guard's Quarters, an ancient building, which was slightly re-conditioned to house them.

7. ARCHAEOLOGICAL GARDENS

DELHI.—The operations in the Delhi group of gardens consisted of the proper maintenance of the standing plants, shrubs, creepers and trees by judicious watering, overall weeding and hoeing operations. A large number of ornamental plants, collected from all over the country, received individual attention in the central nursery in the Central Asian Antiquities Museum compound with a view to planting them in the open with the advent of rains. The propagational activities in the nursery were in full swing all round the year, meeting the requirements not only of the archaeological gardens at Delhi but of a few Circles. A new shade-house was completed.

AGRA.—The long-standing proposal of taking over direct charge of the archaeological gardens at Agra from the State Government, which had been maintaining them on an agency basis, did not materialize during the year under review, but the transfer has just now been effected, and measures to improve the water-supply have been undertaken. It is hoped that this step will make it possible to effect manifold improvements in their lay-out and maintenance, as has been done in the Delhi gardens.

OTHER GARDENS.—The gardens in monuments in Part B States, such as *at* Pinjore (PEPSU), Deeg (Rajasthan), Bangalore and Seringapatam (Mysore) and Aurangabad (Hyderabad) continue to be maintained by the respective State Governments on an agency-basis, but, with a view to their ultimate transfer, they have been inspected by the officers of the Garden Section of the Department. There are plans of laying out small-scale gardens at Khajuraho, Sanchi, Mandu and other places and of improving that of Shanwarwada at Poona.

8. IMPORTANT DISCOVERIES

Below are mentioned some archaeological discoveries made by Departmental officers and officers of the State Departments and other scholars. As only such important discoveries as have been brought to our notice have been recorded, the list need not be regarded as comprehensive.

PALAEOLITHIC AND OTHER SITES ON THE GODAVARI.[1]—Two new palaeolithic sites at Tisgaon in District Ahmednagar were discovered by the Deccan College Postgraduate and Research Institute, Poona. In the same District were also discovered two purely microlithic sites, one at Ghargaon and the other near Sangamner. Other sites, previously discovered, were re-examined. They were Nevasa, Pravara Sangam, Bhojapuri and Paithan, all of which yielded chalcedony blades, lunates and scrapers. Painted pottery of the Nasik-Jorwe type was also found at all these places except Paithan. Of the microliths, the scrapers from Nevasa and Pravara Sangam were of a new type, being square or rectangular, a few worked on all the four sides, while on some others the cortex was retained almost all over the body, only the edges being trimmed. At all these sites the remains of the lithic industry as well as the pottery lay in the black soil as at Nasik. Barring the scrapers, the tools were identical typologically and technologically with those discovered at Maheswar (above, p. 8). The fabric of some of the bowl-types at Navda Toli and Jorwe-Newasa was also identical.

STONE IMPLEMENTS FROM RIVER-BEDS NEAR CHITORGARH.—The Superintendent of the Western Circle explored the beds of the rivers Gambhira and Berach near Chitorgarh, the two streams near Singoli,-the pebble-conglomerate bed of the Chambal and the slopes near the village of Sonita Choppers, handaxes, cleavers and flakes were discovered there. There is a possibility that through this industry we may be able to-correlate the Soan industry of Panjab with the Madras handaxe industry, if intensive work is undertaken in this region.

MICROLITHS AT PATAN, District East Khandesh.—In the course of his inspection and chemical treatment of the inscriptions in the Bhawani temple at Patan, about I0 miles from Chalisgaon, the Archaeological Chemist in India collected a large number of microlithic tools from a hillock to the north of the temple across the river-bed. The tools consisted of flakes and cores of chalcedony, quartz, chert and jasper.

MICROLITHS FROM ADAMGARH QUARRY, District Hoshangabad.—While the same officer was examining the paintings in the rock-shelters at Adamgarh quarry near Hoshangabad, he collected a very large number of tools in front of the shelters. Tools from this region had been collected earlier by M. Ghose and D. H. Gordon, but the present collection enlarges the range very considerably.

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[1] Information from Dr. H. D. Sankalia.

HARAPPA AND OTHER EARLY SETTLEMENTS ON THE UPPER SUTLEJ.—While excavating at Rupar, the Superintendent of the Excavations Branch discovered or re-visited a few sites. Of these Bikkun or Dher Majra, 7 miles north of Rupar, yielded the characteristic Harappa pottery, beads and faience bangles. At Bara the same pottery and bangles, in addition to terracotta cakes, were picked up. The adjoining mound of Salaura bore the Painted Grey Ware. Kotli, 8 miles south-west of Rupar, had the Harappa ware, while in the neighbouring mound of Talapura Harappan relics were not prominent, but grey ware without painting, resembling the Painted Grey Ware in fabric and texture, was available. Chamkaur, II miles west of Rupar, had both the Harappa and Painted Grey Wares. Hawara, 5 miles south-south-west of Chamkaur, was found to contain an extensive but low mound with Harappa sherds.

MOUND AT GOP, Saurashtra.—The mound of Jinavali Gop, where one of the earliest temples of the pre-Chalukyan period is situated, was visited by the Superintendent of the Western Circle, who found painted pottery of the 'Rangpur' type.

PAINTED GREY WARE AT PARIAR, District Unao.—The Superintendent, Excavations Branch, found Painted Grey Ware at Pariar, where copper harpoons and spear-heads had been reported from much earlier. It thus marks an eastern limit of that Ware.

BURIAL-SITES ETC. IN HYDERABAD.[1]—In Hyderabad, the State Department found a prehistoric burial-site, consisting of stone circles and menhirs, near the village of Topran in Medak District. An old town-site was discovered 3 miles from the village of Devargudi.

N.B.P. WARE AT AMARAVATI, District Guntur.—A few sherds of genuine Northern Black Polished Ware were picked up from the ruined *stupa-site* at Amaravati. They mark the south-eastern limit of the spread of that Ware.

MOUND AT MODHERA, District Mehsana.—Modhera, a small village I6 miles north-west of Mehsana in Bombay State, is famous for the Sun-temple of the Chaulukya period. The Superintendent of the Western Circle found a 35-ft. high mound here with the well-known red polished ware and Kshatrapa and Valabhi coins as well as punch-marked coins.

REMAINS ON KHERHI HILL, District Bhagalpur.—The Superintendent, Mid-eastern Circle, found vestiges of a fort, popularly ascribed to king Sasanka of Bengal, and ruins of ancient temples, including Brahmanical images of black basalt of the Pala period, at different levels of the Kherhi Hill, District Bhagalpur.

TEMPLES AT NILAKANTHA, District Alwar.—A large number of sculptures in central Indian style were found at Nilakantha, which contains a large number of ruined early medieval temples.

METALLIC IMAGES FROM KUDALUR, Mysore.[2]—A group of five metallic images was discovered in front of the medieval Mangalesvara temple at Kudalur in Channa-patna Taluk. A surface-survey of the site revealed the existence of several ruined temples, sculptures and inscriptions. It appears that this village was a prosperous *agrahara* during the Ganga, Chola and Hoysala times.

SCULPTURES ETC. FROM RAJASTHAN.[3]—A habitation-site of the Gupta age near Raipur-ki-Radhi, Kotah, twentysix Jaina images from-Tonk bearing fifteenth-century inscriptions and four marble Jaina images from Sudarsan, Didwana, were among the discoveries in Rajasthan.

[1] Information from the Director of Archaeology, Hyderabad State.
[2] Information from Director of Archaeology, Mysore State.
[3] Information from the Chief Superintendent of Archaeology and Museums, Rajasthan State.

9- TREASURE-TROVE

Following are some of the important treasure-troves brought to the notice of the Department. The information is admittedly incomplete, for it is almost certain that all treasure-troves have not been reported to the Department. Of the reports received, those without specific information about the nature of the finds have been excluded.

PUNCH-MARKED COINS FROM AMARAVATI, District Guntur.—A hoard of nearly eight thousand punch-marked coins was discovered at Amaravati in the course of an unauthorized digging in a Government waste land.

A HOARD FROM HYDERABAD.[1]—A hoard consisting of thirtynine silver coins of Roman emperors and eight punch-marked coins was found at Nasthulapur, District Karimnagar.

FINDS IN U. P.[2]—The discovery of several hoards of coins on different occasions was reported from Uttar Pradesh. The U. P. Coin Committee examined more than one thousand such coins and distributed them to different museums in the country. Among those of the ancient period were punch-marked coins and issues of Kushan emperors and Indo-Sassanian rulers. A hoard of twentytwo gold coins,. Kushan and Indo-Sassanian, originated from Harsinghpur, District Meerut.

GUPTA COINS FROM KUMARKHAN, District Ahmedabad.[3]—Some ancient coins, including gold issues of Chandragupta II's archer type, were found at Kumarkhan in Tehsil Viramgam, District Ahmedabad.

METAL IMAGES FROM NANDI, Mysore.[4]—Another set of bronzes was found from a place called Nandi, amongst which the images of Somaskanda and Chandrasekhara bore early features.

BRONZES FROM LILVADEVA, District Panch Mahal.—Seven Jaina images, resembling in style the images of the Akota hoard and belonging to the tenth to the twelfth centuries, were recovered from Lilvadeva near Limdi.

VIJAYANAGARA COINS FROM INGOLLALLI, District Dharwar.[5]—A hoard of over nine hundred coins issued by the Vijayanagara kings, mostly Krishnadeva Raya and Sadasiva Raya, was discovered at Ingollalli.

VIJAYANAGARA COINS FROM HARAPANAHALLI, District Bellary.—A copper pot with a brass lid, containing several gold coins, was discovered at Harapanahalli. Pre-dominant in the hoard were coins of Krishnadeva Raya, which included the Uma-mahesvara and Balakrishna types, the latter locally called Durgavsrahas.

VIRARAYA COINS FROM .BALUVANERLU, Mysore.—A find consisting of Viraraya *panas* of gold occurred at Baluvanerlu in Tiptur Taluk.

MYSORE COINS FROM JAKKENAHALLI, Mysore.—A large hoard of coins belonging to Hyder Ali and Tipu Sultan was found at Jakkenahalli in Channarayapatna Taluk.

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1 Information from the Director of Archaeology, Hyderabad State.
2 Information from the U.P. Coin Committee, Lucknow.
3 Information from the Director of Archives, Bombay State.
4 Information about all Mysore finds from the Director of Archaeology, Mysore State. [8] 5 Information from the Director, Prince of Wales Museum, Bombay.

I0. DEPARTMENTAL PUBLICATIONS

'ANCIENT INDIA.'—It is a matter of regret that it has not been possible to bring the printing of the journal up to date, but this has not been due to any lack of effort on the part of the Department. During the period under review, no. 7 (I95I) of the journal was printed and distributed. No. 8 (I952) has just now been published, while the matter for no. 9 (I953) has been made over to the press. I hope that if no unforeseen difficulties arise again, all arrears will be cleared up before the next meeting of the Board.

GUIDES TO MONUMENTS ETC.—*Khajuraho* by B. L. Dhama and S. C. Chandra was published. A revised edition of *Agra Fort* by Muhammad Ashraf Husain and a fresh edition of *Mahabalipuram* by C. Sivaramamurti are in the proof-stage.

MEMOIRS.—Of the Memoirs of Archaeological Survey of India, no. 7I, *Nagarjunakonda* by T. N. Ramachandran, was published. Nos. 72, *Inscriptions of Chamba* by B. Ch. Chhabra, and 73, *Sanskrit Literature and Art—Mirrors of Indian Culture* by C. Sivaramamurti, are in an advanced proof-stage.

'CORPUS INSCRIPTIONUM INDICARUM.'—A few fresh formes of volume IV of *Corpus Inscriptionum Indicarum, Chedi-Kalachuri Inscriptions*, by V. V. Mirashi were printed off, and it is hoped that the volume will be published before long. Material for volume III of the series, dealing with Gupta inscriptions, received from Dr. D. R. Bhandarkar immediately before his death, is being edited and made press-ready, so that it can be sent to the press as soon as volume IV is out.

'EPIGRAPHIA INDICA.'—Parts v, vi and vii of volume XXVIII and part i of volume XXIX were issued, while parts ii and iii of volume XXIX were passed for final printing. Part viii (Index) of volume XXVII and parts iv, v and vi of volume XXIX are in the press.

'ANNUAL REPORT ON SOUTH INDIAN EPIGRAPHY.'—The *Reports* for I943-44 to I944-45 are in the press.

'ANNUAL REPORT ON INDIAN EPIGRAPHY.'—The *Report* for I947-48 is in the press, while those for I948-49 and I949-50 are ready for the press.

PICTURE POST-CARDS.—The following new sets were printed : Bijapur, Agra, Fatehpur Sikri and Delhi (three sets). The sets on Sanchi and Mahabalipuram were reprinted.

XX. TRAINING

The Department continued to impart training in fieldwork to the nominees of different universities and other bodies. While most of these trainees naturally joined the excavation-camp at Rupar, which was the major camp of the year, other camps also did not lag behind. Among them was a Chinese student and a nominee of the North-Eastern Frontier Agency, which has started a small Department of Archaeology with emphasis on exploration and excavation in the region. Under a UNESCO scheme, a scholar from the Department of Fine Arts, Thailand, also took training with the Department for a short period, within which he was given training, as far as possible, in excavation, conservation, chemical treatment, lay-out of gardens and museology.

The Department has been approached to train a nominee of the Government of Nepal, who, it is hoped, will receive training in the forthcoming field-season.

12. PROGRAMME FOR THE CURRENT YEAR

Subject to modifications that may be felt necessary later on, the Department has placed before itself the execution of the following programme in the field of exploration, preservation of monuments, archaeological chemistry and museums The Epigraphical Branch will continue its surveys and copy and study important inscriptions whenever they are brought to its notice.

EXPLORATION.—The Prehistorian of the Department, if available, will be deputed for exploration in the Sirsa cliff in the foothill of the Siwaliks, where palaeolithic sites have been recently located. Another task awaiting nun is the exploration of the caves and rock-shelters in the Ajaigarh area of Vindhya Pradesh, from where a large number of proto-neoliths and microliths were collected in the eighties of the last century, after which no archaeologist seems to have visited them.

•The Exploration Branch of the headquarters office will, in continuation of the work previously done in Bikaner, start the exploration of the river-valleys in the south-western part of Panjab, so that, by a village-to-village survey, a continuous stretch of land is thoroughly covered. The Excavations Branch will wind up its work at Rupar by excavating a cemetery of the Harappan inhabitants of the place, indications of which were noticed in previous years. Time permitting, it may also excavate at Pariar, District Unao, U.P., where, in addition to a copper hoard found several years back, the occurrence of Painted Grey Ware has recently been noticed (above, p. 38).

The Circles will, as far as possible, undertake small excavations at important sites within their jurisdiction. In this scheme, it is proposed to include Adi-chanallur, the vast megalithic burial-ground in District Tinnevelly, where a well-observed excavation is likely to yield much more reliable data about the megalithic culture of south India than were obtained in the excavation done here in the first years of the century ; Nevasa, District Ahmednagar, the importance of which has been mentioned above (p. 37), or Paithan, the ancient Pratishthana, District Aurangabad, where the sequence of cultures appears to be alike ; Ujjain, the renowned capital of central India, where, apart from the occurrence of microliths and 'black-and-red' ware of the Maheswar type (above, p. 8), the existence of a wooden palisade (?), as at Pataliputra, attracts attention ; Rajgir, where work m the Jivakamravana area (above, p. 9) will be continued ; Mathura, the importance of which has been recognized by all but where no systematic excavation has ever been undertaken ; Tamluk, the ancient port of Bengal, wherefrom valuable finds, including unique terracottas, rouletted ware and odd-shaped pottery, have been reported from time to time ; and Karvan, the traditional birth-place of Lakulisa, which has yielded punch-marked and Kshatrapa coins and the western red polished ware. If the programme proves to be too heavy to complete, parts of it will be carried over to the next year.

Apart from these, extensive excavation will be undertaken at Nagarjunakonda as a special project, to be spread over a period of five years (above, p. 5). An

office with a special staff headed by an Assistant Superintendent has just now been started for the purpose at Guntur.

PRESERVATION OF MONUMENTS.—The Circles have before themselves a full programme of work. While a vast number of monuments will receive annual and special repairs, the following deserve particular mention:

North-western Circle.—Kotla Firoz Shah, Delhi; palaces at Pinjore;.Bhatinda fort; Bhatner fort; and Ranthambhor fort.

Northern Circle.—Dargah of Sheikh Salim Chishti at Fatehpur Sikri ; Fateh-puri gate and inner dome of the Taj Mahal; Idgah at Agra ; temples at Khajuraho; palaces at Deeg ; temples at Adibadri; and tomb of Bibi Tambolan at Khusrubagh, Allahabad.

Mid-eastern Circle.—Fort and gateways at Rohtas and remains at Sarnath.

Eastern Circle.—Sun-temple at Konarak, where the recommendations of the Konarak Temple Committee will be progressively implemented; and Sibdol temple at Sibsagar.

South-eastern Circle.—Group of temples at Markanda; Golkonda fort ; Vishnu temple at Janjgir ; temple at Lepakshi ; and fort at Gandikota.

Southern Circle.—Fort St. George, Madras, and the Brihadisvara temples at Tanjore and Gangaikondacholapuram.

South-western Circle.—Salabat Khan's tomb at Mahekari; Pandulena caves ; Bhaja caves ; Gol Gumbad ; Mulk-i-Madan at Bijapur ; fort at Daulatabad ; and Ajanta, Ellora and Aurangabad caves.

Western Circle.—Tambekarwada at Baroda ; Baba Lauli's mosque ; and Chitorgarh.

Central Circle.—Sanchi and groups of monuments at Mandu.

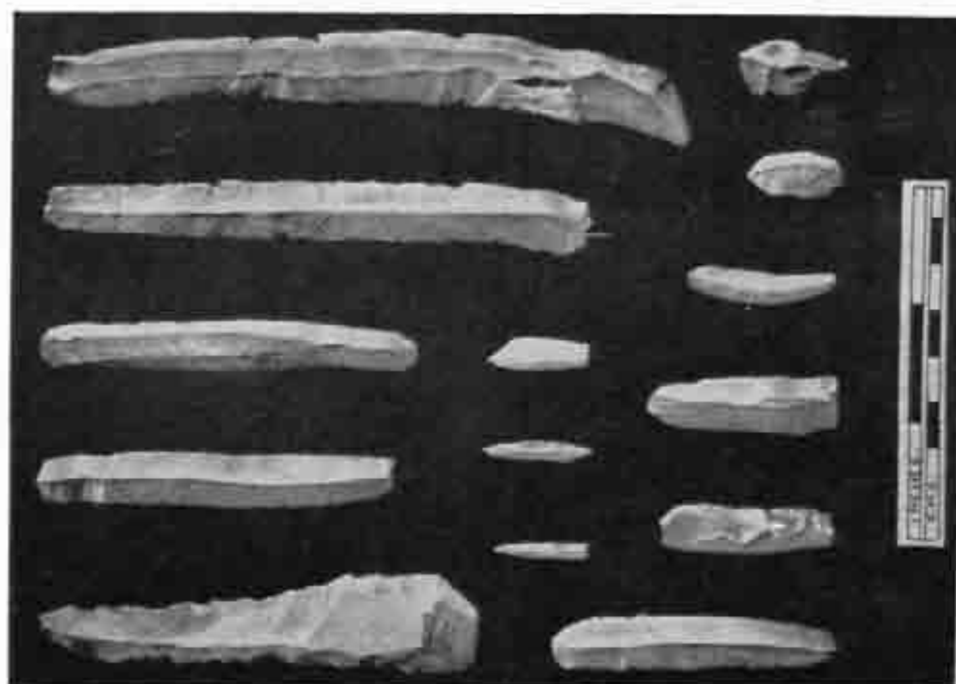
ARCHAEOLOGICAL CHEMISTRY. The work of chemical preservation, both of structures and of paintings, will continue on all the monuments mentioned above (pp. 29-31) in this connexion. In addition, the ancient plaster on *stupa* I at Sanchi, which becomes a store-house of moisture during the rains, will be rendered water-tight. The temple at Baijnath in Kangra and the wall-paintings on the monuments in Chamba and Jaipur will be attended to. The Shore temple at Mahabalipuram, suffering from constant exposure to salt-laden sea-winds, will receive treatment. The Branch will continue its researches in geochronology, petrology, ancient ceramics etc., as well as in applied chemistry, such as preservatives etc.

MUSEUMS.—Apart from improvements in the existing museums, there are schemes of providing additional space in the museum-buildings at Sanchi, Khajuraho and Kondapur to remove the congestion and improve the display.

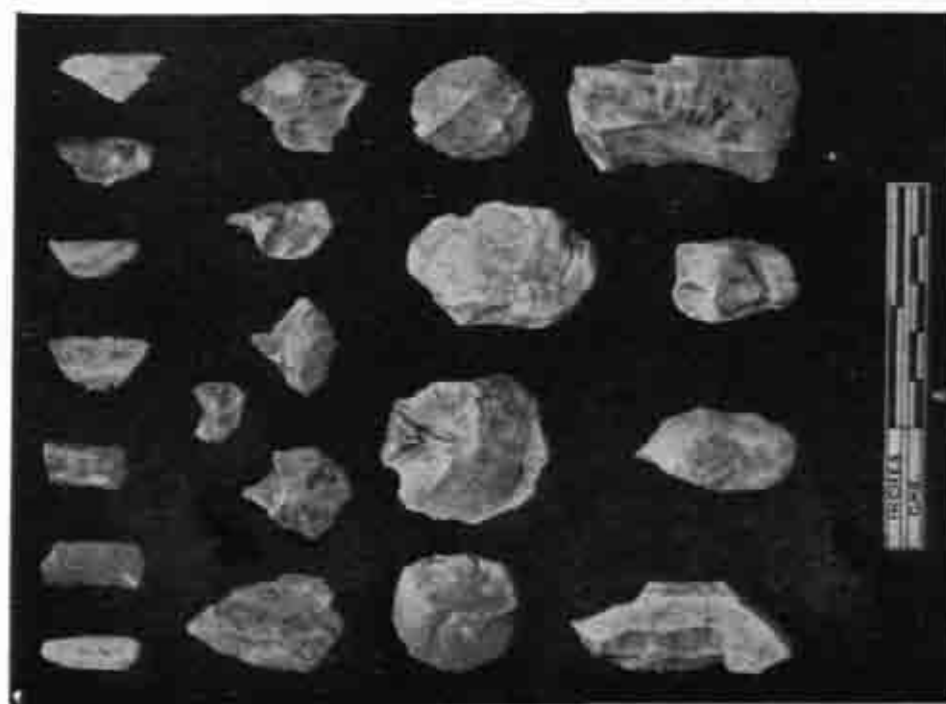
There is at present no arrangement for the proper exhibition of antiquities found in explorations, with the result that not only can an outsider know anything about the antiquarian finds in the country, but an archaeologist himself does not always know where to look for comparative material. To remedy this, it is proposed to set apart a large room in the Central Asian Antiquities Museum for the display of excavated material. Similarly, all Circles will properly store and exhibit in their office-buildings a representative set of objects found by them in the course of explorations.

OTHER ACTIVITIES.—With the phenomenal increase in tourist-traffic in the country, it has become imperative to provide ordinary amenities for visitors to the most-frequented monuments. A list of monuments urgently requiring such amenities has been drawn up and work on this line will be initiated this year.

The responsibility of the Department for providing guide-service in important monuments was till now undefined. It has, however, lately been accepted in principle that in order that the visitors may have a correct appreciation of ancient art and architecture, important monuments should be provided with trained guides, who are to be attached to the Department. Steps are being taken to give effect to the principle.



B. *Microliths from Maski, District Raichur*
(*see page 8*)



A. *Microliths from Birbhanpur, District Burdwan*
(*see page 6*)

PLATE II



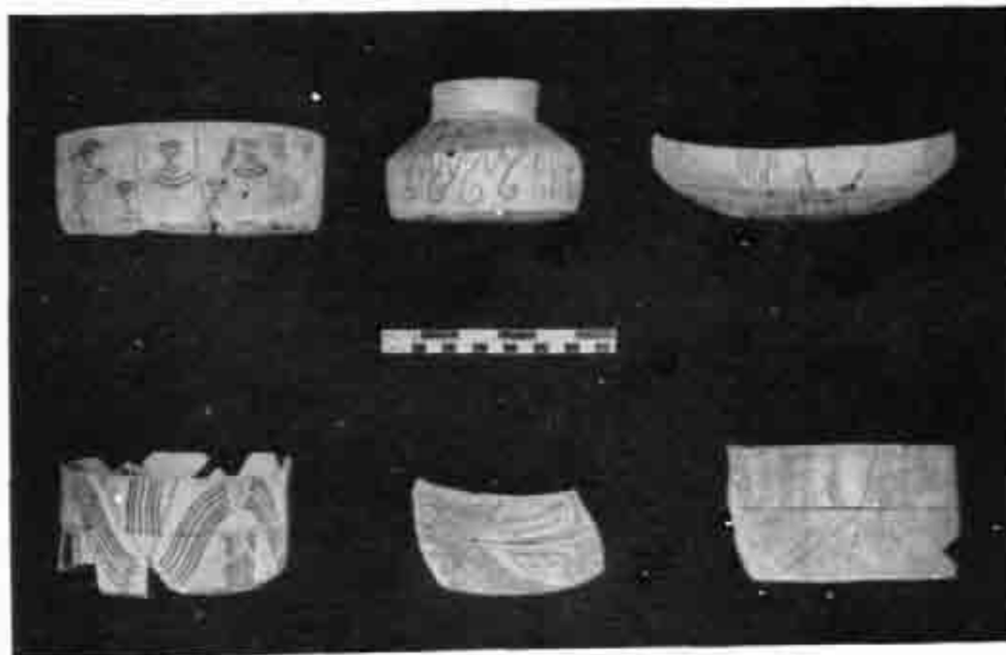
A. *Rupar, District Ambala : a large wall of Period III* (see page 7)



B. *Rupar, District Ambala : ring-wells of Period III* (see page 7)



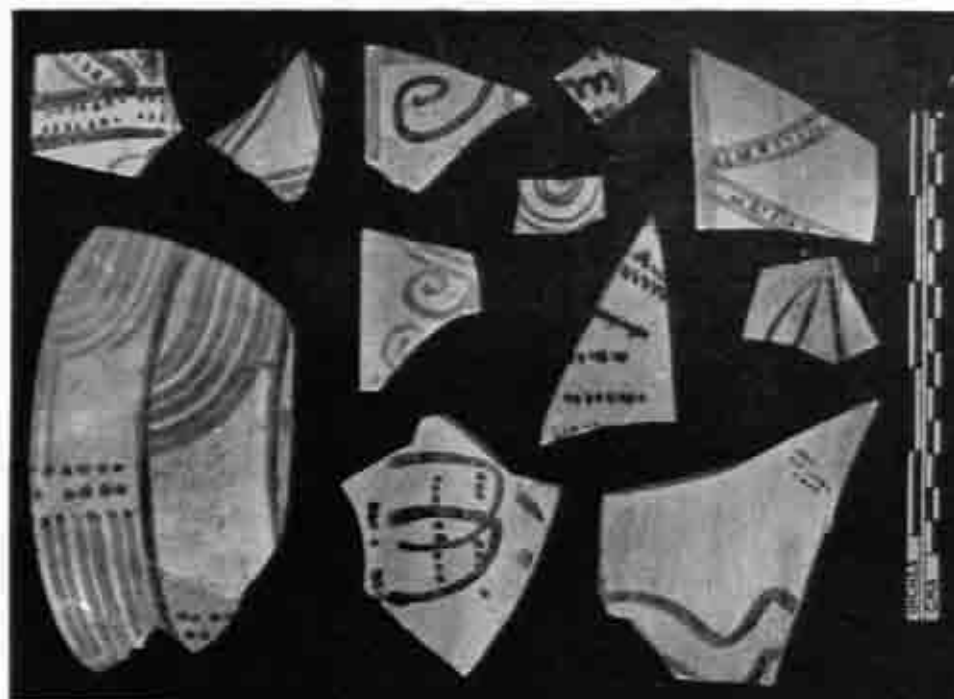
A



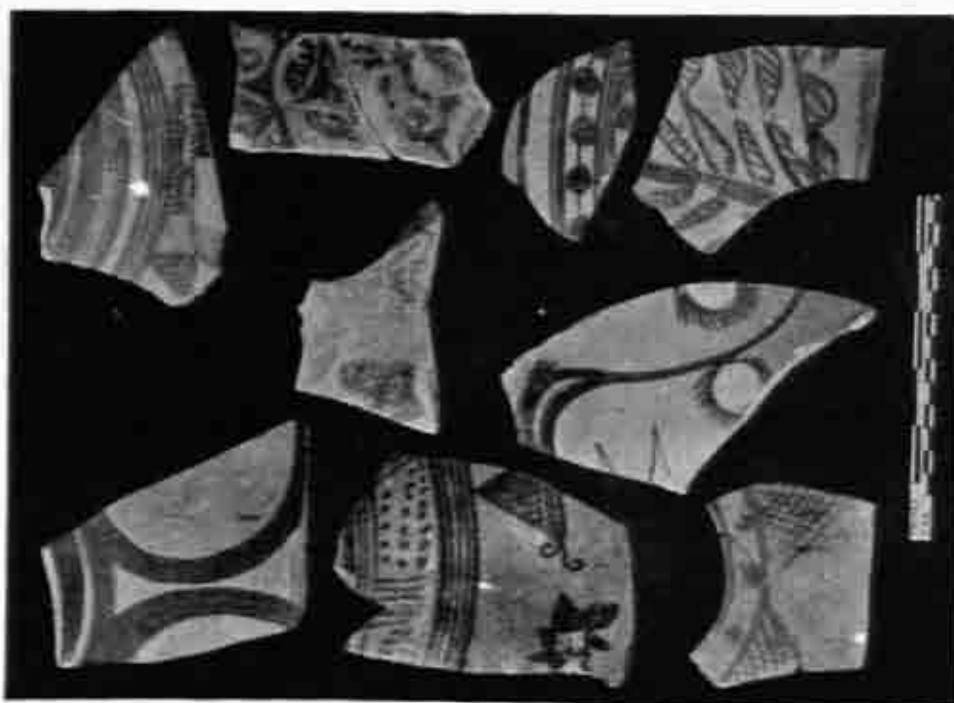
B

Pottery from Rupar : A, *Harappa ware* ; B, *Painted Grey Ware* (*see page 6*)

PLATE IV

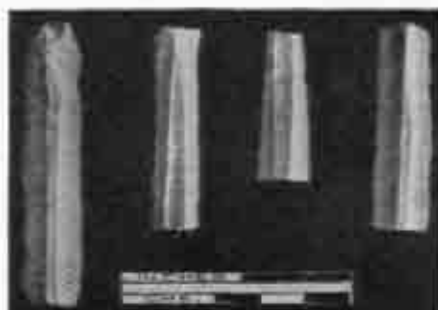


B



A

Pottery from Rupar: A, Harappa Ware; B, Painted Grey Ware (see page 6)



A



B



C

Miscellaneous objects from Rupar : A *and* B, *chert blades and steatite seal of the Harappan period ;* C, *later coins (see pages 6 and 7)*

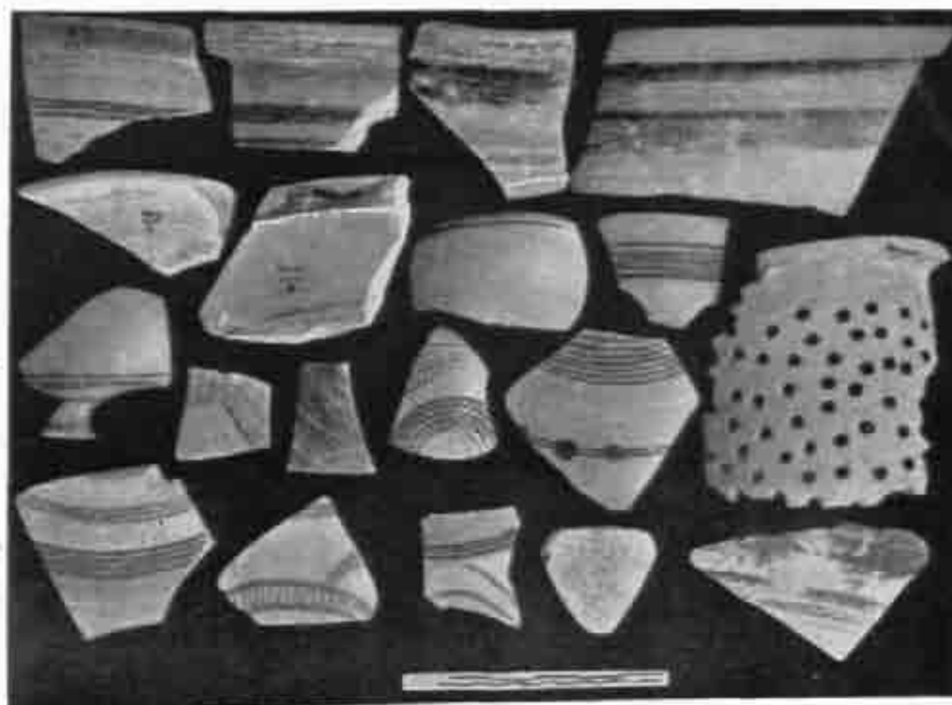


A. *Rangpur, District Jhalawar : general view of excavated remains* *(see page 7)*



B. *Rajgir, District Patna : general view of excavated remains* *(see page 9)*





Rangpur : pottery with Harappan affinity (*see page 7*)

PLATE VIII



A



B



C



D

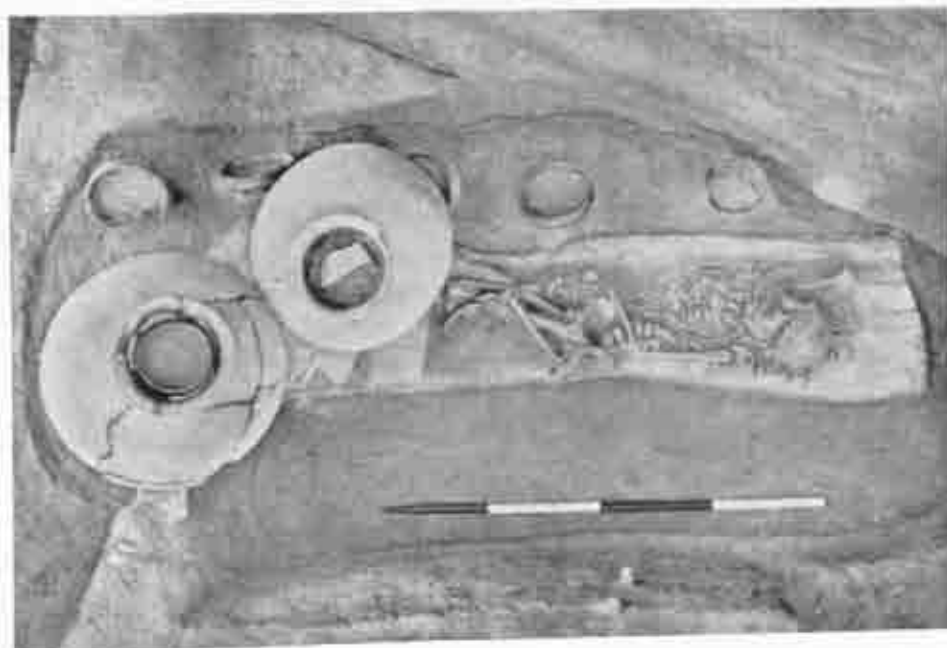


E

Objects from Maheswar, District Nimar : A-C, *painted sherds ;* D, *channel-spouts ;* E, *chalcedony saw-blade* (*see page 8*)



A



B

Maski, District Raichur, burials of the megalithic age : A, *section of a burial-pit ;* B, *an extended burial* (*see page* 8)

PLATE X



Kausambi, District Allahabad: general view of a part of the excavated remains in the Ghoshitarama area (see page 9)

PLATE XI



A



B

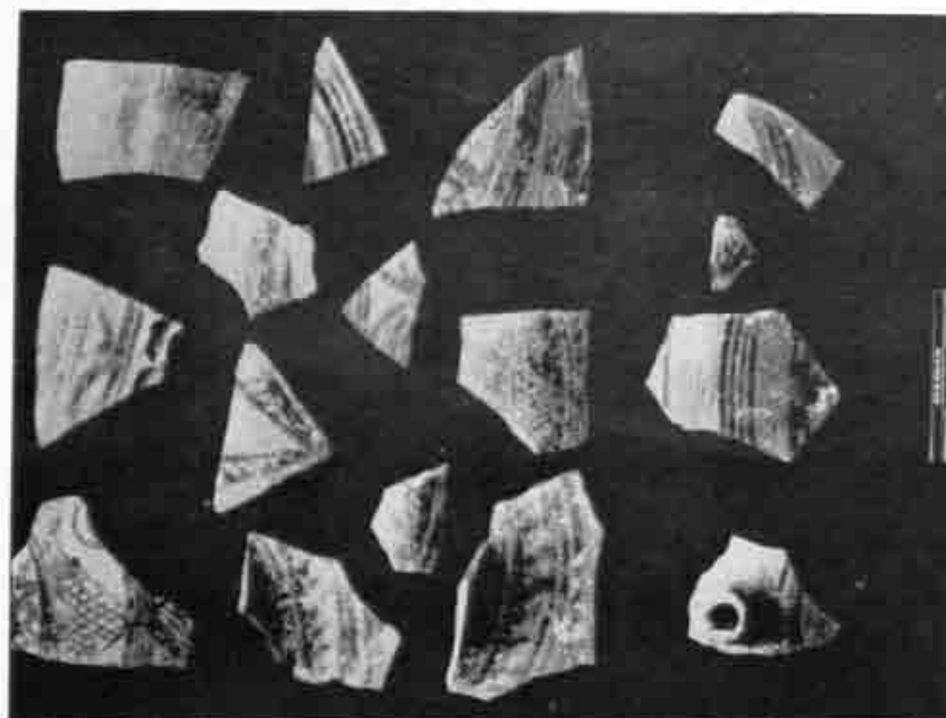


C

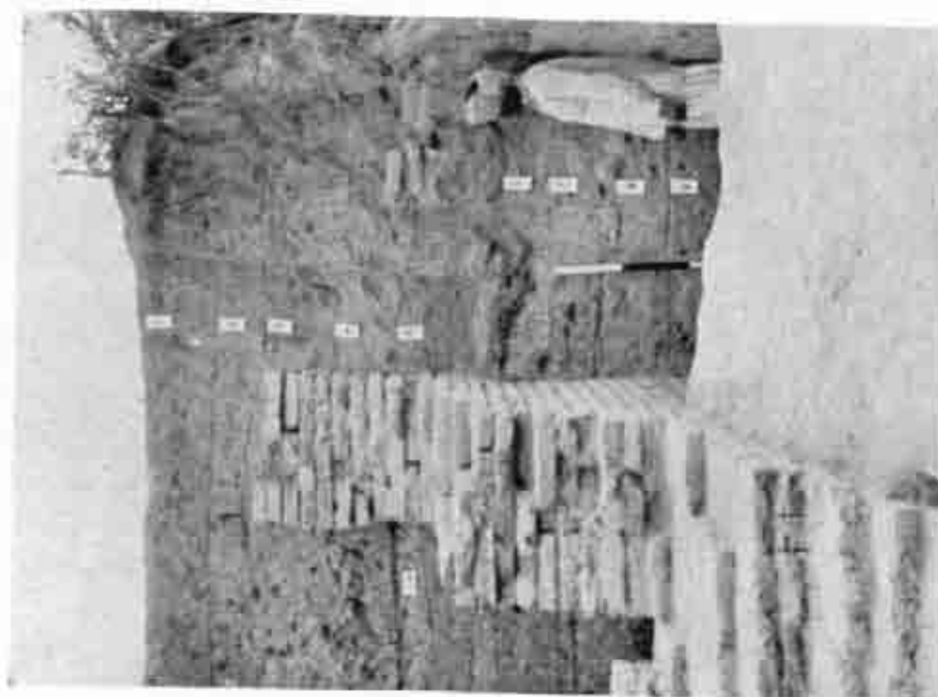
Objects from Kausambi : A, *inscribed fragment of a stone-railing ;* B *and* C, *terracotta plaques, hts.* $3\frac{1}{8}$ *and* $3\frac{3}{8}$ *ins. respectively (see page 9)*

(see page 9)

PLATE XII



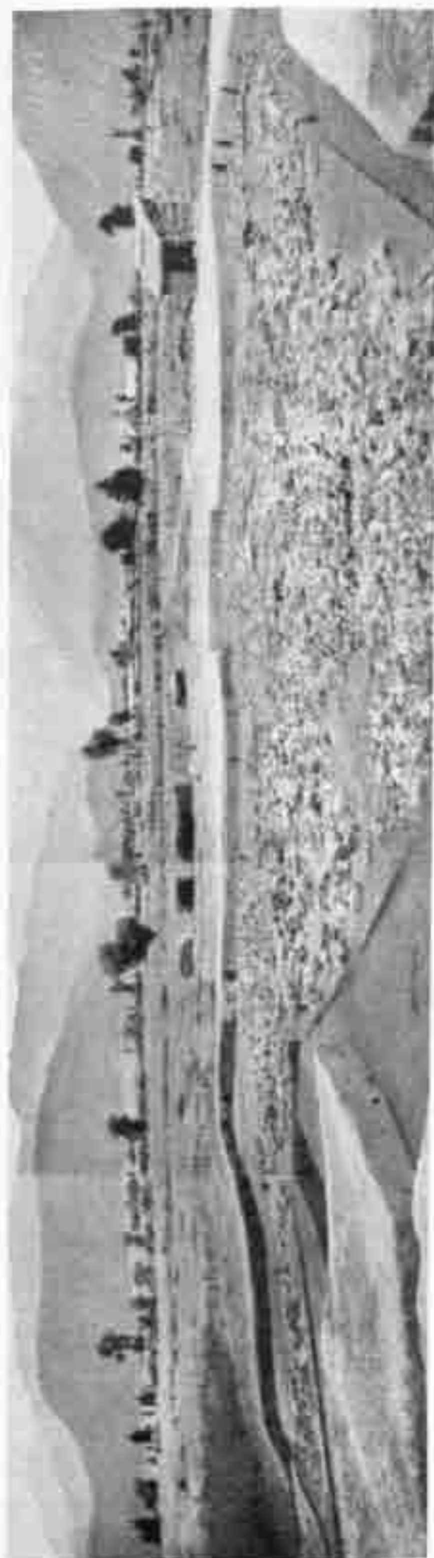
B



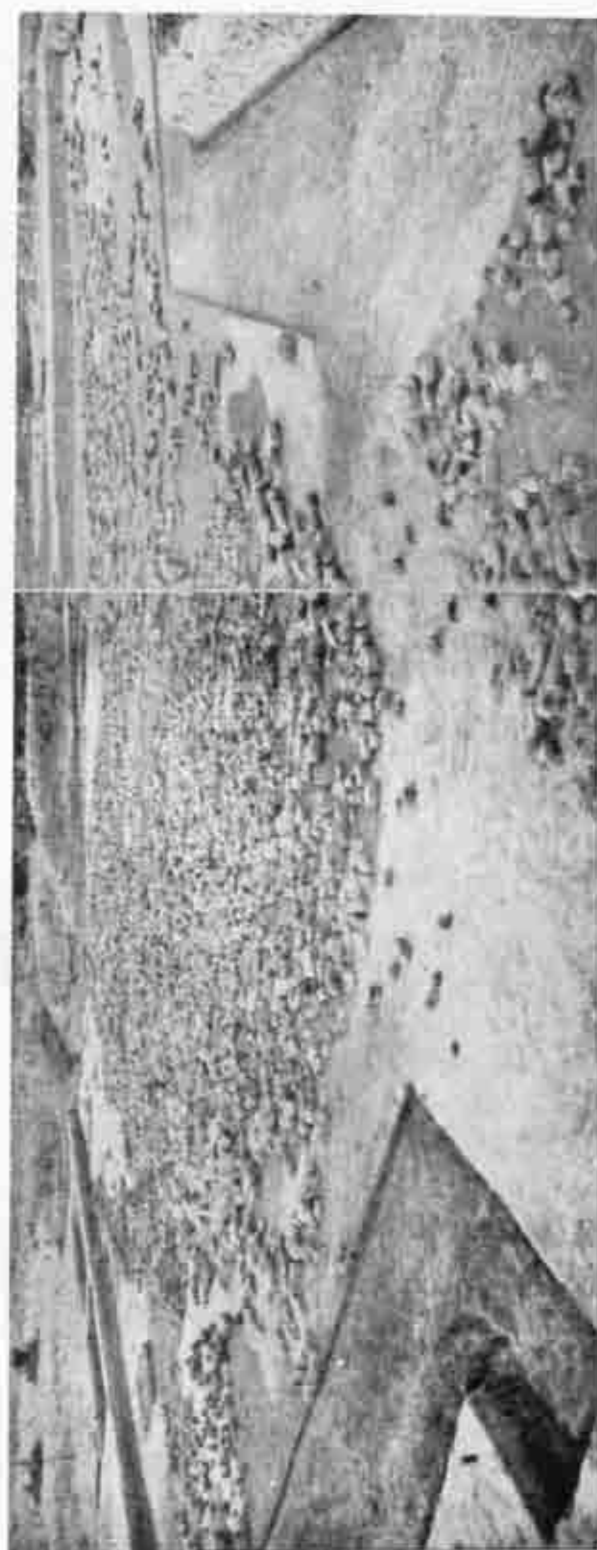
A

Vadnagar, District Mehsana : A, *view of an excavated wall* ; B, *painted pottery of the Kshatrapa period* (*see page 10*)

PLATE XIII



A

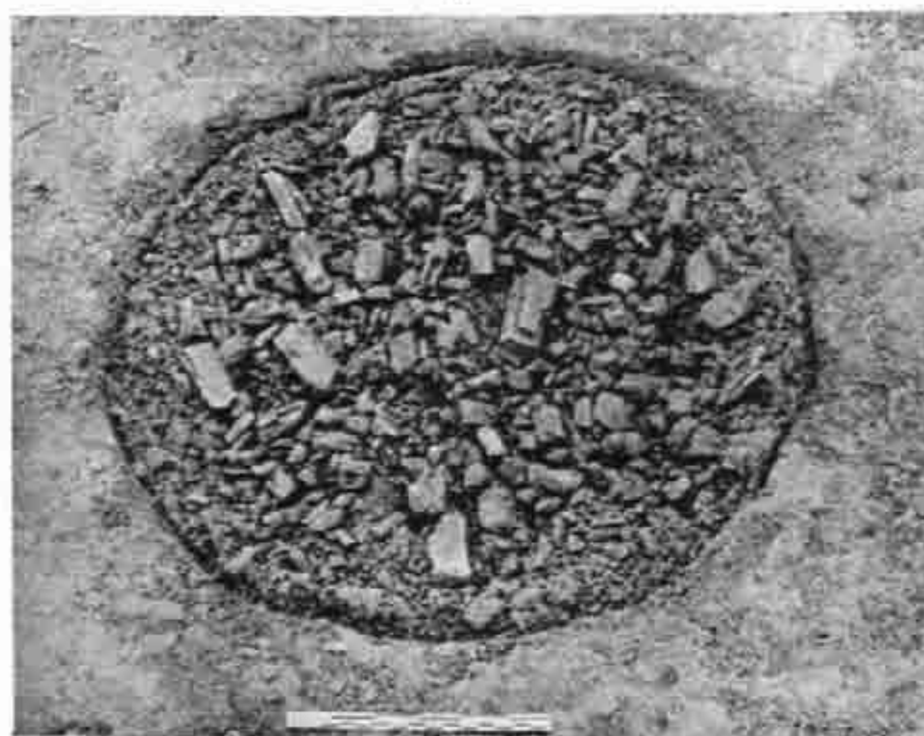


B

Jagatgram, District Dehra Dun, general view of remains of asvamedha-*platforms* : A, *site I* ; B, *site II* (*see page 10*)



A



B

Jagatgram : A, *part-view of the lay-out of bricks in site II ;* B, *charcoal-pit (garhapatya) in site I (see pages 10 and 11)*

PLATE XV



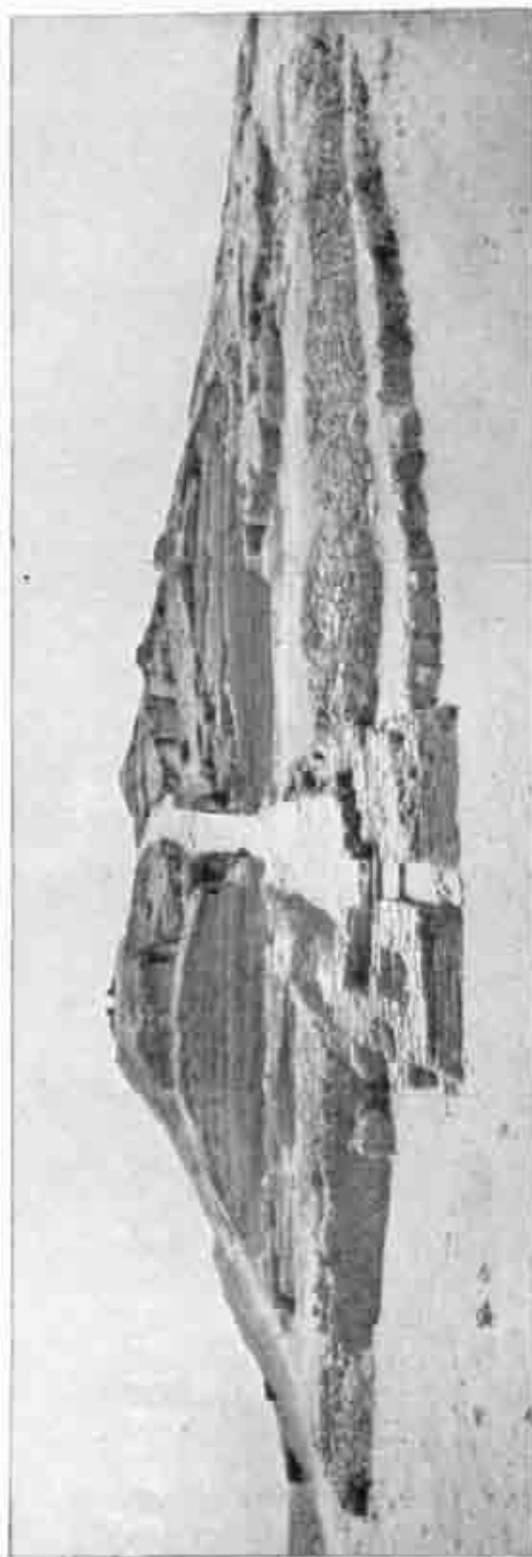






Inscribed bricks from Jagatgram (see page 11)

PLATE XVI



A

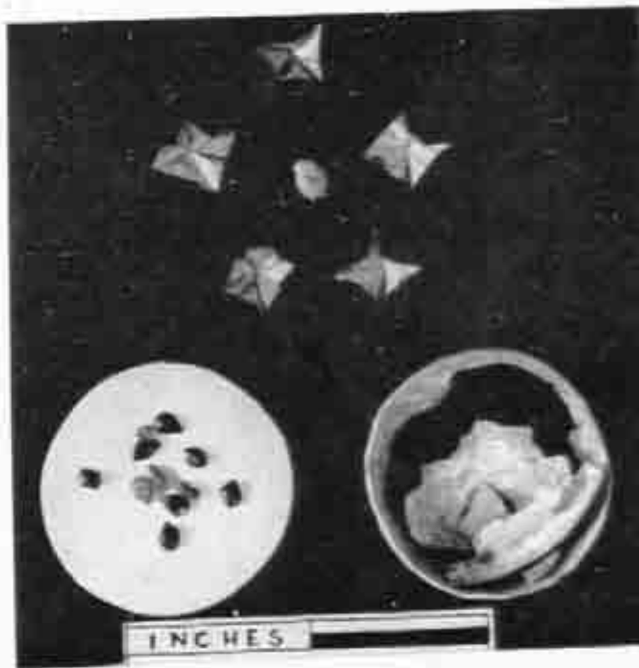


B

Salihundam, District Srikakulam : A, *general view of excavated remains* : B, *inscribed brick* (*see pages* 11 *and* 12)



A



B

Objects from Salihundam : A, *inscribed conch-shell* ; B, *contents of a pottery reliquary* (*see pages 11 and 12*)

PLATE XVIII





Pallavamedu, District Kanchipuram : decorated bangles of different materials
(*see page 12*)



B



C



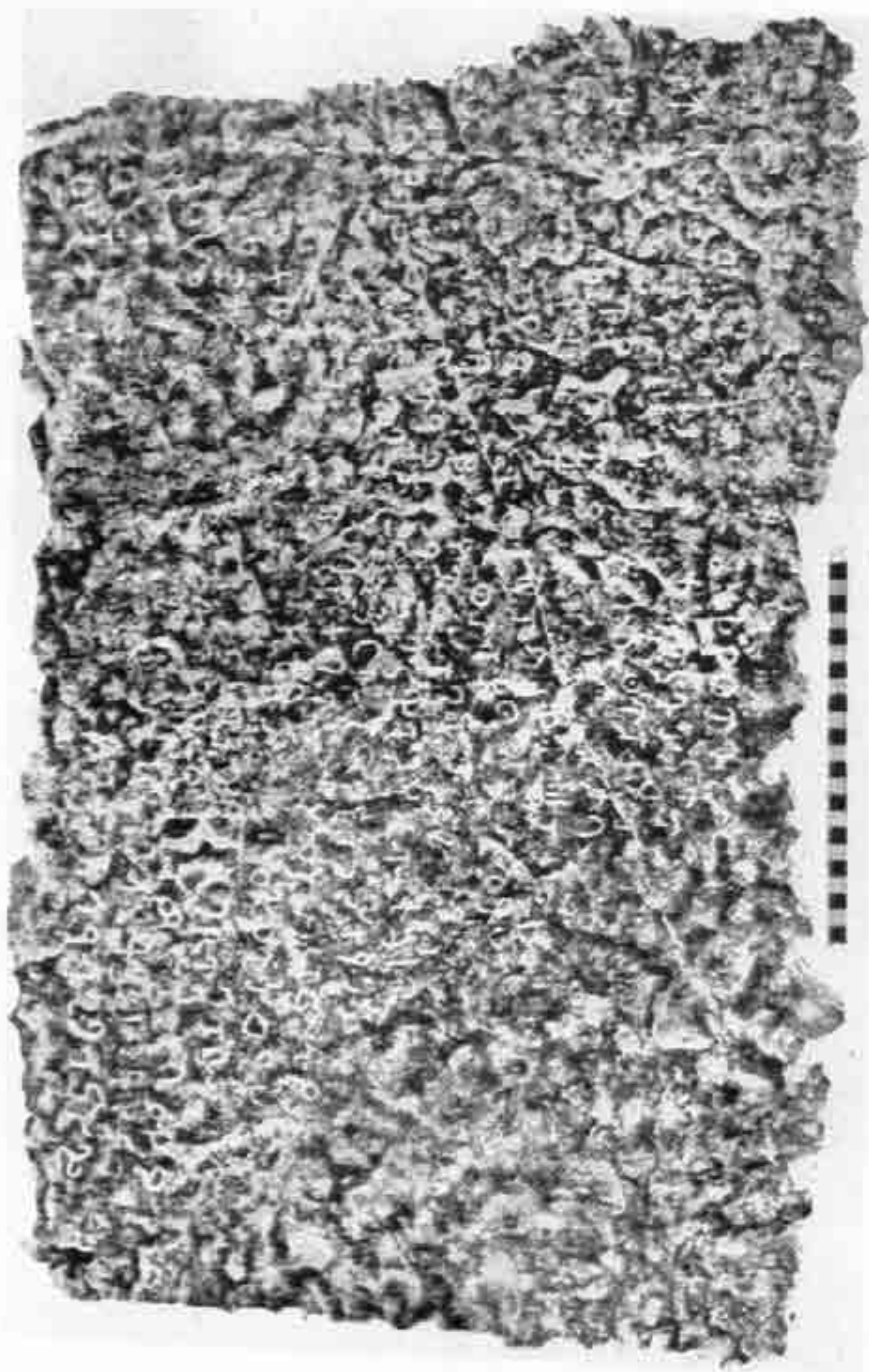
D



A

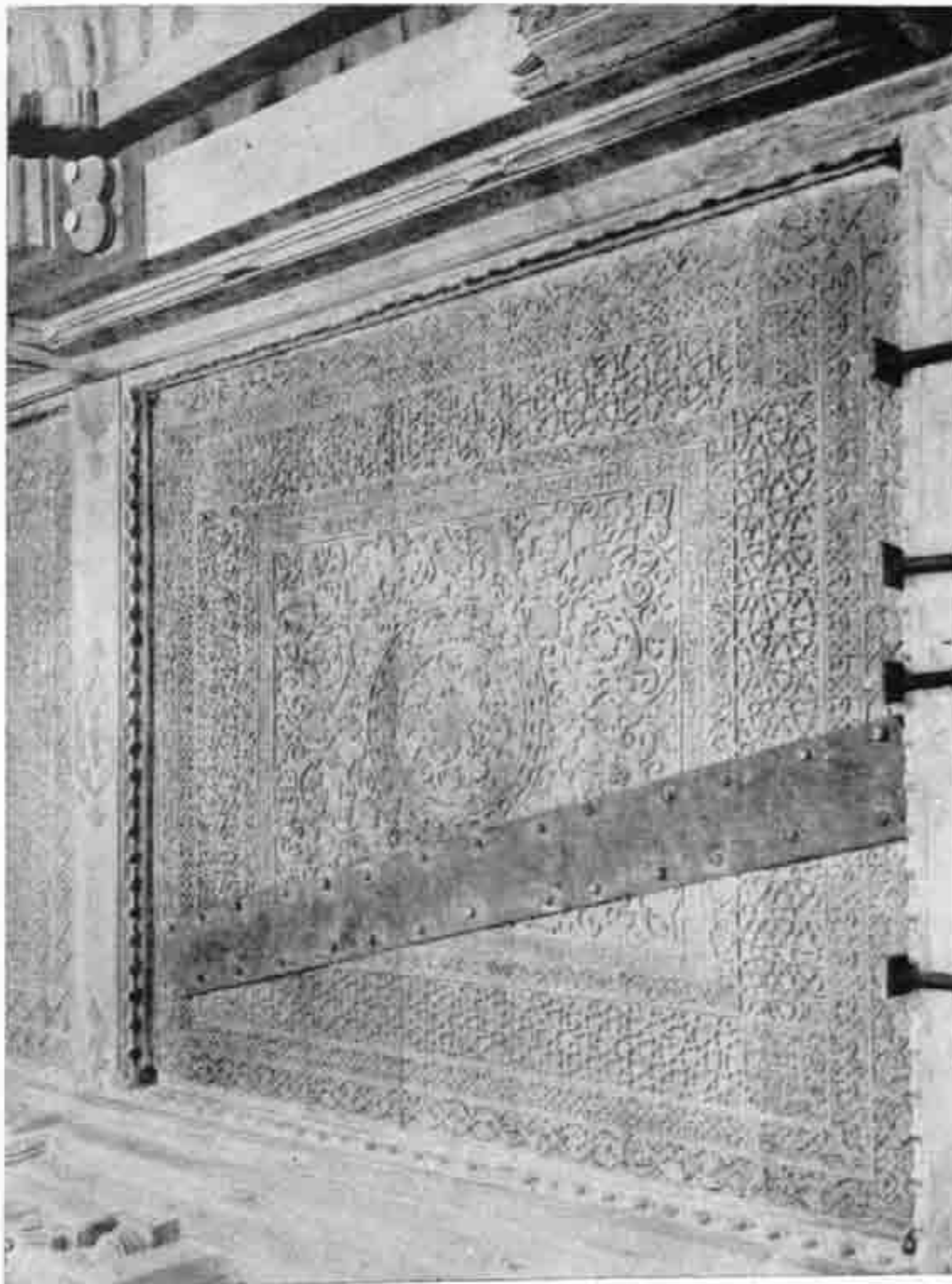
Sirpur, District Raipur : A, *view of a ruined temple* ; B-D, *stone sculptures* (*see page 12*)

PLATE XX



Minor Rock-edict of Asoka at Rajula-Mandagiri, District Kurnool (*see page 13*)

PLATE XXI



Makhdum Shah Daulat's tomb at Maner, District Patna : decorated ceiling after conservation (*see pages 19 and 29*)

PLATE XXII



A



B

Shore temple at Mahabalipuram, District Chingleput : A, general view ; B, view of the sea-groyne (*see page 22*)

PLATE XXIII



A



B



C

Group of temples at Badoli, District Chitorgarh : A *and* B, *before conservation ;* C, *after clearance* *(see page 26)*

PLATE XXIV



B



A

Oil-painting at Tambekarwada, Baroda : A, *before and* B, *after cleaning* (*see page 30*)